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# PICKUP BOX REMOVAL PROGRAM

## Alterations to Complete Vehicles

Persons who alter complete (certified) Pickup Trucks by removal of the Pickup box should be aware that this type of activity would impose upon them the corresponding responsibility for ensuring that the units as sold are in compliance with all applicable safety and/or emissions (including noise and RFI) requirements. Specific questions concerning compliance or certification to these requirements should be directed to the vehicle alterer's legal counsel or the National Highway Traffic Safety Administration, the Environmental Protection Agency, the California Air Resources Board, or in Canada, the Ministry of Transport or the Canadian Department of Commerce.

The Environmental Protection Agency has provided an explanation of the policy they will follow regarding the modification by the secondary manufacturers of complete Light Duty Trucks prior to sale and delivery to the ultimate purchaser. This explanation is contained in a letter from C. N. Freed of the EPA to M.H. McBride of the Recreation Vehicle Industry Association, dated July 13, 1979. A portion of this letter states:

"...Secondary manufacturers are not manufacturers under the [Clean Air] Act when the following conditions are met:

1. The vehicles produced by a secondary manufacturer conform in all material respects to the design specification in the original manufacturer's application for certification (hereafter 'Application'); and

2. The weight of the vehicles produced by a secondary manufacturer, including the weight of fuel at nominal tank capacity, is no more than 500 lbs. above the maximum vehicle weight."

No frontal area restrictions will apply to secondary manufacturers who comply with the conditions above. However, every vehicle sold to an ultimate purchaser must be covered by emission warranty mandated by section 207(a) of the Act. Secondary manufacturers who do not meet the above conditions will be considered manufacturers under the Act and will be required to ensure that the vehicles they produce are covered by a certificate of conformity.

The Maximum vehicle weight for a given vehicle is determined by:

A) Subtracting 300 lbs. from the highest loaded vehicle weight (see 40 CFR 86.082-2 for loaded vehicle weight defnition and the table at 40 CFR 86.129-94) associated with the test weight listed in the application for the vehicle, and

B) Adding the weight of all options that are offered by the original manufacturer for the applicable truck line that were not included in the curb weight reported in the application.

In the case of mutually exclusive options, only the weight of the heavier option is to be used when computing the maximum vehicle weight.

(Alterations – continued from previous page)

In addition, the California Air Resources Board has provided an explanation of the policy they will follow regarding the modification by the secondary manufacturers of complete Light Duty Trucks prior to sale and delivery to the ultimate purchaser. This explanation is contained in the California Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks and Medium Duty Vehicles, adopted March 22, 2012 and dated December 6, 2012.

A portion of this document states:

"Certification, if granted, is effective only for the vehicle/test group described in the original manufacturer's certification application.

Modifications by a secondary manufacturer to vehicles/engines shall be deemed not to increase emissions above the standards under which those vehicles/engines were certified and to be within the original certification if such modifications do not: (1) increase vehicle weight more than 10 percent above the curb weight, increase frontal area more than 10 percent, or result in a combination increase of weight plus frontal area of more than 14 percent; or (2) include changes in axle ratio, tire size, or tire type resulting in changes in the drive train ratio of more than 5 percent; or (3) include any modification to the emission control system. No originally certified vehicle/engine which is modified by a secondary manufacturer in a manner described in items (1) through (3) of the preceding sentence may be sold to an ultimate purchaser, offered or delivered for sale to an ultimate purchaser, or registered in California unless the modified vehicle/engine is certified by the state board in accordance with applicable test procedures to meet emission standards for the model year for which the vehicle/engine was originally certified. For the purposes of this subsection, "secondary manufacturer" means any person, other than the original manufacturer, who modifies a new motor vehicle prior to sale to the ultimate purchaser."

Those who wish to remove the Pickup box from a Pickup Truck for the purpose of installing special equipment or another type of body should be further advised that a Pickup may require modification in one of the following areas. Before a decision is made to alter a C/K Pickup Model, please be advised of the following considerations:

## Vehicle:

Analyze the vehicle specifications for product content. The option content of a particular vehicle will determine which if any of the five areas of modification might not be applicable to the vehicle alterations contemplated.

## Service Parts:

The service parts and related service part number as outlined in the five areas of modification may be ordered through your local Chevrolet/GMC Dealer. Contact your Dealer's Service Parts Representative for availability and price.

## Areas of Modification:

1. Fuel filler neck assembly, housing, and ground strap.
2. Rear axle vent hose.
3. Tail lamp, tail lamp wiring harness and license plate bracket assembly.
4. Spare tire mounting.
5. Body pressure relief valve (see UI Bulletin #44).

# CMVSS and FMVSS

Compliance of Canadian and Federal Motor Vehicle Safety Standards will be affected by Upftters removing Pickup Box and Rear Bumper to install a second unit body:

MVSS 105 – Hydraulic brake (Vehicles greater than 3500 kg (7716 lb) GVWR)

MVSS 108 – Lighting Equipment

MVSS 111 – Rear View Mirrors

MVSS 135 – Light Vehicle Brakes, applies to vehicles 3500 kg (7716 lb) GVWR or less

MVSS 204 – Steering Control Rear Displacement

MVSS 208 – Occupant Crash Protection

MVSS 219 – Windshield Zone Intrusion 4536 kg (10,000 lb) or less

MVSS 301 – Fuel System Integrity, trucks

# Federal Motor Vehicle Safety Standards

## CMVSS 105 and FMVSS 105 – HYDRAULIC AND ELECTRIC BRAKE SYSTEMS

## Applies to all types of Incomplete Vehicles Contained in this Document Greater than 3500 kg (7,716 lbs.) GVWR

TYPE 2 The following statement is applicable to all types of Incomplete Vehicles contained in this document with a greater than 3500 kg (7,716 lbs.) GVWR, (unless otherwise noted on the cover).

This incomplete vehicle when completed will conform to CMVSS 105 and FMVSS 105 provided it is completed in accordance with the following specific conditions by the (intermediate and) final stage manufacturer:

A. Providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems, as manufactured by General Motors, including but not limited to those listed below (if equipped):

### Anti-Lock Brake System:

Hydraulic brake lines, fittings and routings Brake assemblies and components (service/ Hydraulic brake valves and components parking) - (power boosters, master cylinder, wheel Master cylinder-warning statement cylinder, calipers, wheel speed sensor, wheel Parking brake actuator and related mechanical speed sensor wiring, brake lining, etc.) Components Brake pedal, brake switch, parking brake hand lever Power steering or vacuum lines and routing or park brake switch and related mechanical Power steering or vacuum pump components Tires and Wheels Brake system electrical controls and logic Vacuum brake lines, fittings and routings gauges and warning devices, and statements Vehicle wiring harnesses Hydraulic brake fluid and reservoirs, wheelbases .

B. GVWR, GAWR front and rear weight ratings as listed on the Incomplete Vehicle Label affixed to the front cover of this document must not be exceeded.

C. The center of gravity of the total vehicle falls within the areas referenced on the “ALLOWABLE CENTER OF GRAVITY CHART” that follows. Instructions for determining the allowable center of gravity variation are listed below:

These charts detail the envelope of allowable center of gravity variation for completed vehicles. This is significant for the lightly loaded portion of FMVSS 105, which is defined as curb plus 181.4 kg (400 lb) distributed in the driver-passenger area of the vehicle for vehicles with GVWR of 4536 kg (10,000 lb) or less or as curb plus 226.8 kg (500 lb) distributed in the driver-passenger area of the vehicle for vehicles with GVWR greater than 4536 kg (10,000 lb).

The lightly loaded center of gravity of complete vehicles needs to be restricted so it will meet FMVSS 105 stopping distances. The laden center of gravity does not need to be specified as it is controlled within the CMVSS 105 and FMVSS 105 test procedure by specific instructions as to how ballast is to be placed (while height is not controlled, it is assumed that for test purposes it would be reasonable).

For upfitter use, the center of gravity location can be approximated by the following formula:

$$d = \frac{[Wrc + Wrb + [(Hp)(Wp)/WB]]\ WB}{Wt}$$

$$h = \frac{[h1Wc + h2Wb + (h3)(Wp)]}{Wt}$$

**d** = horizontal distance from front wheels to completed vehicle center of gravity mm (in)
**h** = vertical distance from ground to completed vehicle center of gravity mm (in)
**Wrc** = rear component of Chassis weight kg (lb)
**Wrb** = rear component of body weight kg (lb)
**WB** = vehicle wheelbase mm (in)
**Wt** = total weight of chassis and body kg (lb) plus 181.4 kg (400 lb) for vehicles with GVWR of 4536 kg (10,000 lb) or less.
**Wt** = total weight of chassis and body kg (lb) plus 226.8 kg (500 lb) for vehicles with GVWR greater than 4536 kg (10,000 lb).
**h1** = center of gravity height from ground of the Bare Chassis = 743 mm (29.25 in)
**Wc** = total weight of Chassis kg (lb)
**h2** = center of gravity height of body from ground mm (in)
**Wb** = total weight of body kg (lb)
Wp = 181.4 kg (400 lb) Amount from lightly loaded definition that is evenly distributed in driver-passenger area of vehicle for vehicles with GVWR of 4536 kg (10,000 lb) or less.
**Wp** = 226.8 kg (500 lb) Amount from lightly loaded definition that is evenly distributed in driver-passenger area of vehicle for vehicles with GVWR greater than 4536 kg (10,000 lb).
**Hp** = 1482 mm (58.35 in) Horizontal distance from front axle to center of gravity of 181.4 kg (400 lb) or 226.8 kg (500 lb) evenly distributed in driver-passenger area of vehicle.
**h3** = 1013 mm (39.88 in) Vertical center of gravity height of 181.4 kg (400 lb) evenly distributed in driver-passenger area for vehicles with GVWR of 4536 kg (10,000 lb) or less.
**h3** = 1013 mm (39.88 in) Vertical center of gravity height of 226.8 kg (500 lb) evenly distributed

## CMVSS 105 and FMVSS 105
## ALLOWABLE CENTER OF GRAVITY CHARTS

| Model | GVWR kg (lb.) | Brake System | Wheel Base mm (in) | Rear Wheel | Incomplete, Pickup Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lb) or 226.8 kg (500 lb) as defined by CMVSS 105 and FMVSS 105 Mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | $H_1$ | $H_2$ | A | B | C | D | E | F |
| C25743 | 4309 (9500) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| C25743 | 4491 (9900) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| C25743 | 4536 (10,000) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| C25753 | 4309 (9500) | J95 | 3662 (144.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1213 (47.8) | 1467 (57.8) | 2618 (103.1) | 2871 (113.0) | 1209 (47.6) | 2564 (100.9) |
| C25753 | 4491 (9900) | J95 | 3662 (144.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1213 (47.8) | 1467 (57.8) | 2618 (103.1) | 2871 (113.0) | 1209 (47.6) | 2564 (100.9) |
| C25753 | 4536 (10,000) | J95 | 3662 (144.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1213 (47.8) | 1467 (57.8) | 2618 (103.1) | 2871 (113.0) | 1209 (47.6) | 2564 (100.9) |
| C25903 | 4218 (9300) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1131 (44.5) | 1385 (54.5) | 2433 (95.8) | 2687 (105.8) | 1120 (44.1) | 2377 (93.6) |
| C25903 | 4491 (9900) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1131 (44.5) | 1385 (54.5) | 2433 (95.8) | 2687 (105.8) | 1120 (44.1) | 2377 (93.6) |
| C25903 | 4536 (10,000) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1131 (44.5) | 1385 (54.5) | 2433 (95.8) | 2687 (105.8) | 1120 (44.1) | 2377 (93.6) |
| C25943 | 4309 (9500) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1397 (55.0) | 1651 (65.0) | 3031 (119.3) | 3248 (129.3) | 1406 (55.4) | 2982 (117.4) |
| C25943 | 4491 (9900) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1397 (55.0) | 1651 (65.0) | 3031 (119.3) | 3248 (129.3) | 1406 (55.4) | 2982 (117.4) |
| C25943 | 4536 (10,000) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1397 (55.0) | 1651 (65.0) | 3031 (119.3) | 3248 (129.3) | 1406 (55.4) | 2982 (117.4) |

## CMVSS 105 and FMVSS 105

## ALLOWABLE CENTER OF GRAVITY CHARTS (CONTINUED)

| Model | GVWR kg (lb.) | Brake System | Wheel Base mm (in) | Rear Wheel | Incomplete, Pickup Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lb) or 226.8 kg (500 lb) as defined by CMVSS 105 and FMVSS 105 Mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | $H_1$ | $H_2$ | A | B | C | D | E | F |
| C25753 | 4309 (9500) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| C25753 | 4491 (9900) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| C25753 | 4536 (10,000) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| C35743 | 4536 (10,000) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| C35743 | 4763 (10,500) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1074 (42.3) | 1286 (50.6) | 2971 (117.0) | 3182 (125.3) | 1171 (46.1) | 2928 (115.3) |
| C35743 | 5035 (11,100) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1074 (42.3) | 1286 (50.6) | 2971 (117.0) | 3182 (125.3) | 1171 (46.1) | 2928 (115.3) |
| C35903 | 4717 (10,400) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 943 (37.1) | 1155 (45.5) | 2593 (102.1) | 2804 (110.4) | 1019 (40.1) | 2547 (100.3) |
| C35903 | 5035 (11,100) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 943 (37.1) | 1155 (45.5) | 2593 (102.1) | 2804 (110.4) | 1019 (40.1) | 2547 (100.3) |
| C35903 | 5908 (13,025) | J96 | 3395 (133.7) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 943 (37.1) | 1155 (45.5) | 2593 (102.1) | 2804 (110.4) | 1019 (40.1) | 2547 (100.3) |
| C35903 | 6078 (13,400 | J96 | 3395 (133.7) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 943 (37.1) | 1155 (45.5) | 2593 (102.1) | 2804 (110.4) | 1019 (40.1) | 2547 (100.3) |
| | | | | | | | | | | | | |

## CMVSS 105 and FMVSS 105

## ALLOWABLE CENTER OF GRAVITY CHARTS (CONTINUED)

| Model | GVWR kg (lb.) | Brake System | Wheel Base mm (in) | Rear Wheel | Incomplete, Pickup Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lb) or 226.8 kg (500 lb) as defined by CMVSS 105 and FMVSS 105 Mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | $H_1$ | $H_2$ | A | B | C | D | E | F |
| C35943 | 4536 (10,000) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219 (48.0) | 1397 (55.0) | 1651 (65.0) | 3031 (119.3) | 3284 (129.3) | 1406 (55.4) | 2982 (117.4) |
| C35943 | 4853 (10,700) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1165 (45.9) | 1377 (54.2) | 3235 (127.4) | 3446 (135.7) | 1278 (50.3) | 3195 (125.8) |
| C35943 | 5171 (11,400) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1165 (45.9) | 1377 (54.2) | 3235 (127.4) | 3446 (135.7) | 1278 (50.3) | 3195 (125.8) |
| C35953 | 4536 (10,000) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| C35953 | 4853 (10,700) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219 (48.0) | 1103 (43.4) | 1315 (51.8) | 3055 (120.3) | 3266 (128.6) | 1205 (47.4) | 3013 (118.6) |
| C35953 | 5058 (11.200) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1103 (43.4) | 1315 (51.8) | 3055 (120.3) | 3266 (128.6) | 1205 (47.4) | 3013 (118.6) |
| C35953 | 5908 (13,025) | J96 | 4017 (158.2) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 1103 (43.4) | 1315 (51.8) | 3055 (120.3) | 3266 (128.6) | 1205 (47.4) | 3013 (118.6) |
| C36003 | 5987 (13,200) | J96 | 3493 (137.5) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 968 (38.1) | 1180 (46.5) | 2666 (105.0) | 2877 (113.3) | 1048 (41.3) | 2619 (103.1) |
| C36043 | 5908 (13,025) | J96 | 4017 (158.2) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 1190 (46.9) | 1402 (55.2) | 3307 (130.2) | 3518 (138.5) | 1307 (51.5) | 3267 (128.6) |
| C36403 | 5987 (13,200) | J96 | 4115 | DRW | 304.8 (12.0) | 1219.2 (48.0) | 1128 (44.4) | 1340 (52.8) | 3128 (123.1) | 3339 (131.5) | 1234 (48.6) | 3086 (121.5) |
| | | | | | | | | | | | | |

## CMVSS 105 and FMVSS 105

## ALLOWABLE CENTER OF GRAVITY CHARTS (CONTINUED)

| Model | GVWR kg (lb.) | Brake System | Wheel Base mm (in) | Rear Wheel | Incomplete, Pickup Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lb) or 226.8 kg (500 lb) as defined by CMVSS 105 and FMVSS 105 Mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | $H_1$ | $H_2$ | A | B | C | D | E | F |
| K25743 | 4309 (9500) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| K25743 | 4491 (9900) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| K25743 | 4536 (10,000) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| K25753 | 4309 (9500) | J95 | 3662 (144.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1213 (47.8) | 1467 (57.8) | 2618 (103.1) | 2871 (113.0) | 1209 (47.6) | 2564 (100.9) |
| K25753 | 4491 (9900) | J95 | 3662 (144.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1213 (47.8) | 1467 (57.8) | 2618 (103.1) | 2871 (113.0) | 1209 (47.6) | 2564 (100.9) |
| K25753 | 4536 (10,000) | J95 | 3662 (144.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1213 (47.8) | 1467 (57.8) | 2618 (103.1) | 2871 (113.0) | 1209 (47.6) | 2564 (100.9) |
| K25903 | 4309 (9500) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1131 (44.5) | 1385 (54.5) | 2433 (95.8) | 2687 (105.8) | 1120 (44.1) | 2377 (93.6) |
| K25903 | 4491 (9500) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1131 (44.5) | 1385 (54.5) | 2433 (95.8) | 2687 (105.8) | 1120 (44.1) | 2377 (93.6) |
| K25943 | 4536 (10,000) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1397 (55.0) | 1651 (65.0) | 3031 (119.3) | 3248 (129.3) | 1406 (55.4) | 2982 (117.4) |

## CMVSS 105 and FMVSS 105

## ALLOWABLE CENTER OF GRAVITY CHARTS (CONTINUED)

| Model | GVWR kg (lb.) | Brake System | Wheel Base mm (in) | Rear Wheel | Incomplete, Pickup Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lb) or 226.8 kg (500 lb) as defined by CMVSS 105 and FMVSS 105 Mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | $H_1$ | $H_2$ | A | B | C | D | E | F |
| K25953 | 4309 (9500) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| K25953 | 4491 (9900) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| K25953 | 4536 (10,000) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| K35743 | 4536 (10,000) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1288 (50.7) | 1542 (60.7) | 2785 (109.6) | 3039 (119.6) | 1288 (50.7) | 2733 (107.6) |
| K35743 | 4899 (10,800) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1074 (42.3) | 1286 (50.6) | 2971 (117.0) | 3182 (125.3) | 1171 (46.1) | 2928 (115.3) |
| K35743 | 5216 (11,500) | J95 | 3904 (153.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1074 (42.3) | 1286 (50.6) | 2971 (117.0) | 3182 (125.3) | 1171 (46.1) | 2928 (115.3) |
| K35903 | 4536 (10,000) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1131 (44.5) | 1385 (54.5) | 2433 (95.8) | 2687 (105.8) | 1120 (44.1) | 2377 (93.6) |
| K35903 | 4853 (10,700) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 943 (37.1) | 1155 (45.5) | 2593 (102.1) | 2804 (110.4)) | 1019 (40.1) | 2547 (100.3) |
| K35903 | 5171 (11,400) | J95 | 3395 (133.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 943 (37.1) | 1155 (45.5) | 2593 (102.1) | 2804 (110.4)) | 1019 (40.1) | 2547 (100.3) |
| K35943 | 4989 (11,000) | J95 | 4259 (157.7) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1165 (45.9) | 1377 (54.2) | 3235 (127.4) | 3446 (135.7) | 1278 (50.3) | 3195 (125.8) |
| K35943 | 4536 (10,000) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1323 (52.1) | 1576 (62.0) | 2863 (112.7) | 3117 (122.7) | 1326 (52.2) | 2812 (110.7) |
| K35943 | 4989 (11,000) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1103 (43.4) | 1315 (51.8) | 3055 (120.3) | 3266 (128.6) | 1205 (47.4) | 3013 (118.6) |
| K35953 | 5262 (11,600) | J95 | 4017 (158.2) | SRW | 304.8 (12.0) | 1219.2 (48.0) | 1103 (43.4) | 1315 (51.8) | 3055 (120.3) | 3266 (128.6) | 1205 (47.4) | 3013 (118.6) |

## CMVSS 105 and FMVSS 105

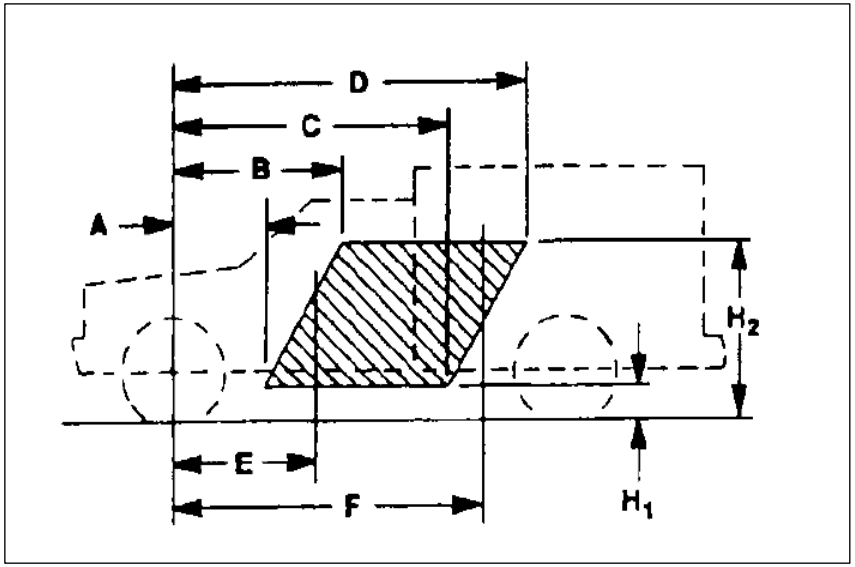
## ALLOWABLE CENTER OF GRAVITY CHARTS (CONTINUED)

| Model | GVWR kg (lb.) | Brake System | Wheel Base mm (in) | Rear Wheel | Incomplete, Pickup Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lb) or 226.8 kg (500 lb) as defined by CMVSS 105 and FMVSS 105 Mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | $H_1$ | $H_2$ | A | B | C | D | E | F |
| K35953 | 5908 (13,025) | J96 | 4017 (158.2) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 1103 (43.4) | 1315 (51.8) | 3055 (120.3) | 3266 (128.6) | 1205 (47.4) | 3013 (118.6) |
| K36003 | 5987 (13,200) | J96 | 3493 (137.5) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 968 (38.1) | 1180 (46.5) | 2666 (105.0) | 2877 (113.3) | 1048 (41.3) | 2619 (103.1) |
| K36043 | 5987 (13,200) | J96 | 4356 (171.5) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 1190 (46.9) | 1402 (55.2) | 3307 (130.2) | 3518 (138.5) | 1307 (51.5) | 3267 128.6) |
| K36043 | 5987 (13,200) | J96 | 4115 (162.0) | DRW | 304.8 (12.0) | 1219.2 (48.0) | 1128 (44.4) | 1340 (52.8) | 3128 (123.1) | 3339 (131.5) | 1234 (48.6) | 3086 (121.5) |

SRW = Single Rear Wheel
DRW = Dual Rear Wheel
C/G = Center of Gravity
Brake Systems: Hydraulic Powered Boosters – J95, J96

CMVSS 105 and FMVSS 105

ALLOWABLE CENTER OF GRAVITY CHARTS (CONTINUED)




**C/G of vehicle in CMVSS or FMVSS unladen condition [Curb + 181.4 kg. (400 lb) or Curb + 226.8 kg. (500 lb) as defined by CMVSS 105 and FMVSS 105] must be inside shaded area – that is, the C/G must be within the trapezoid formed by the coordinates A, B, C, D, H1, & H2, plus the C/G must be to the rear of vertical line E and forward of vertical line F.**

## CMVSS 108 and FMVSS 108 – LAMPS, REFLECTIVE DEVICES AND ASSOCIATED EQUIPMENT

**Pickup and Utility**

**TYPE 1: The following statement is applicable to pick up and Utility types of incomplete vehicles contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 108 and FMVSS 108 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the Owner Manual instructions and illumination components, assemblies or systems installed by General Motors.
The following lamp identification codes of the listed devices cannot be modified or changed. If lamp requirements are modified or changed, the following devices may have to be replaced:

| | |
|---|---|
| Hazard Flasher – four #1157 lamps<br>Two #194 lamps and two #168 lamps<br><br>Hazard Warning Signal Operating Unit –<br>Four #1157 lamps, two #194 lamps and two #168 lamps | Turn Signal Flasher – two #1157 lamps,<br>One #194 lamp and one #168 lamp<br><br>Turn Signal Operating Unit – two #1157 lamps,<br>One #194 lamp and one #168 lamp. |

## Chassis Cab

**TYPE 1: The following statement is applicable to Chassis Cab types of incomplete vehicles contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 108 and FMVSS 108 if it is completed with a body width less than 203 cm (80 in), and providing the following conditions are met:

A. Each of these devices must be properly installed on the completed vehicle and meet all requirements of CMVSS 108 and FMVSS 108:

1. The following when provided by General Motors will conform to CMVSS 108 and FMVSS 108 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems, as manufactured by General Motors, including but not limited to those listed below:

Back-up lamps
Daytime running lamps controls and wiring (Canada)
Front cab roof clearance and identification lamps
Front side marker lamps
Front side marker reflex reflectors
Hazard Flasher
Hazard warning signal operating unit
Headlamp dimmer switch
Headlamp high beam indicator
Headlamps and/or fog lamps
High-mounted stop lamp
License plate lamp
Owner Manual instructions
Park lamps
Rear reflex reflectors
Rear side marker lamps
Rear turn signal lamps
Stop lamps
Tail lamps
Turn signal and Vehicle hazard warning indicator lamps
Turn signal flasher
Turn signal lamps
Turn signal operating unit
Vehicle hazard warning signal flasher
Vehicle hazard warning signal operating unit

NOTE: Chassis Cabs completed with a body width less than 203.2 cm (80 in), and NOT equipped with a turn signal/flasher module intended for use with Light Emitting Diode (LED) tail amps, or NOT equipped with a tail lamp delete option and/or NOT equipped with a Center High-Mounted Stop Lamp delete option and ARE equipped with the "Calibration Tail Lamp, Single Bulb Option". In order to maintain operation of the turn signal bulb outage feature, the LH and RH tail lamp assemblies must each contain one (1) operational bulb of the bulb designation number as manufactured by General Motors.

2. No part of the completed vehicle shall be installed so as to prevent any of the devices listed above from meeting their required photometric output at the specified test points. If such interference exists, the applicable devices may have to be relocated or additional devices added to meet the requirements of CMVSS 108 and FMVSS 108. Any CMVSS 108 or FMVSS 108 part shall not be painted.

3. The following devices must be installed on the rear body of the vehicle and meet all of the requirements of CMVSS 108 and FMVSS 108

| | |
|---|---|
| Front and Rear Clearance Lamps | Rear Side Marker Lamps |
| Front and Rear Identification Lamps | Rear Side Marker Reflex Reflectors |

4. The following additional devices must be installed on the body and meet all requirements of CMVSS 108 and FMVSS 108 if the overall vehicle length is greater than or equal to 9.144 m (30 ft.):

| | |
|---|---|
| Intermediate Side Marker Lamps | Intermediate Side Reflex Reflectors |

B. No alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed in A, 1, above.

C. Dealers, Intermediate, or Final State Manufacture's, after removing the wooden shipping bumper, must relocate rear Stop, Stop and Turn Sign Lamps by switching the left hand and right hand brackets and lamp assemblies such that the lights are mounted outboard of the shipping location. Two additional installation bolts are included in the Incomplete Vehicle Envelope.

Conformity with CMVSS 108 and FMVSS 108 cannot be determined based upon the components supplied on the incomplete vehicle, and General Motors makes no representation to conformity with the standard.

## CMVSS 111 and FMVSS 111 – Rearview Mirrors

**TYPE 1: The following statement is applicable to all types of incomplete vehicles contained in this document, without shipped loose mirror or mirror delete options (unless otherwise noted on the cover).**

This incomplete vehicle will conform to CMVSS 111 and FMVSS 111 providing:

A. No alterations or substitutions are made to the outside mirrors or inside mirrors furnished with the vehicle,
B. The driver's seat location is not altered,
C. The body width is not increased, and
D. The body remains symmetrical about the vehicle centerline.

**TYPE 3: The following statement is applicable to all types of incomplete vehicles contained in this document, with shipped loose mirror or mirror delete options (unless otherwise noted on the cover).**

This vehicle will conform to FMVSS 111 providing no alterations or substitutions are made to the outside or inside mirrors furnished with the vehicle, the driver's seat location is not altered and the body width is not increased.

## CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS

**Applies to all types of Incomplete Vehicles Contained in this Document**

**TYPE 2: The following statement is applicable to all types of Incomplete Vehicles contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle when completed will conform to CMVSS 126 and FMVSS 126 provided it is completed in accordance with the following specific conditions by the (intermediate and) final stage manufacturer:

A. Providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems, as manufactured by General Motors, including but not limited to those listed below:

Anti-Lock Brake, Traction Control and Electronic Stability control system, including sensors and control module.
Brake assemblies and components (service/ parking) - (i.e. power boosters, master cylinder, wheel cylinder, calipers, rotors, wheel speed sensor, wheel speed sensor wiring, brake lining, etc)
Brake pedal, brake switch, parking brake hand lever or park brake switch and related mechanical components
Brake system electrical controls and logic
Gauges and warning devices, and statements
Hydraulic brake fluid and reservoirs
Hydraulic brake lines, fittings and routings
Hydraulic brake valves and components
Master cylinder-warning statement
Owner Manual instructions
Parking brake actuator and related mechanical components
Power steering or vacuum lines and routing
Power steering or vacuum pump
Tires and Wheels
Stability control system, including control module, sensors and software calibrations
Steering control system including related hardware
Suspension components (i.e. bushings, control arms, shocks, springs, sway bars)
Vacuum brake lines, fittings and routings
Vehicle wiring harnesses
Wheelbases

B. GVWR, GAWR front and rear weight ratings as listed on the Incomplete Vehicle Label affixed to the front cover of this document must not be exceeded.
C. The Tire Pressures as listed on the Incomplete Vehicle Label affixed to the front cover of this document must be followed
D. The Maximum Completed Vehicle Unloaded (Curb) restrictions as shown in CMVSS301 and FMVSS 301 Table A, must not be exceeded.
E. The center of gravity of the total vehicle falls within the areas referenced on the FMVSS 126 Compliance Certification "X = Longitudinal, Y = Lateral and Z = Vertical Center of Gravity (CG) Restrictions" charts that follow. Instructions for determining the allowable center of gravity variation are listed below:

CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS (continued)

**K2XX HD C/K 25903**
**Firestone Transforce HT ALS LT245/75R17/E (QHQ)**
**Bridgestone Duravis M700 AT LT265/70R17/E (QXT)**
**Goodyear Wrangler SR-A ALS LT265/70R18/E (QWF)**
**X = Longitudinal, Y = Lateral and Z = Vertical Center of Gravity (CG) Restrictions**

| | | @ Y – Lateral CG Offset Location cm (in) | | | | |
|---|---|---|---|---|---|---|
| **@ Maximum X Longitudinal CG Location from Front Axle CL cm (in)** | **Model Identification** | **-10 (-3.9)** | **-5 (-2)** | **0** | **5 (2)** | **10 (3.9)** |
| **140 (55.1)** | C25903 | 86.7 (34.1) | 90.5 (35.6) | 91.5 (36.0) | 90.5 (35.6) | 86.7 (34.1) |
| | K25903 | 86.7 (34.1) | 90.5 (35.6) | 91.5 (36.0) | 90.5 (35.6) | 86.7 (34.1) |
| **150 (59.1)** | C25903 | 86.7 (34.1) | 90.5 (35.6) | 91.5 (36.0) | 90.5 (35.6) | 86.7 (34.1) |
| | K25903 | 86.7 (34.1) | 90.5 (35.6) | 91.5 (36.0) | 90.5 (35.6) | 86.7 (34.1) |
| **160 (63.0)** | C25903 | 91.0 (35.8) | 92.3 (36.4) | 94.9 ( 37.4) | 92.3 (36.4) | 91.0 (35.8) |
| | K25903 | 91.0 (35.8) | 92.3 (36.4) | 94.9 (37.4) | 92.3 (36.4) | 91.0 (35.8) |
| **170 (66.9)** | C25903 | 91.0 (35.8) | 94.0 (37.0) | 94.9 (37.4) | 94.0 (37.0) | 91.0 (35.8) |
| | K25903 | 91.0 (35.8) | 94.0 (37.0) | 94.9 (37.4) | 94.0 (37.0) | 91.0 (35.8) |
| **180 (70.9)** | C25903 | 91.0 (35.8) | 94.0 (37.0) | 94.9 (37.4) | 94.0 (37.0) | 91.0 (35.8) |
| | K25903 | 91.0 (35.8) | 94.0 (37.0) | 94.9 (37.4) | 94.0 (37.0) | 91.0 (35.8) |
| **190 (74.8)** | C25903 | 82.5 (32.5) | 89.0 (35.1) | 95.5 (37.6) | 89.0 (35.1) | 82.5 (32.5) |
| | K25903 | 82.5 (32.5) | 89.0 (35.1) | 95.5 (37.6) | 89.0 (35.1) | 82.5 (32.5) |
| **200 (78.7)** | C25903 | 82.5 (32.5) | 89.0 (35.1) | 95.5 (37.6) | 89.0 (35.1) | 82.5 (32.5) |
| | K25903 | 82.5 (32.5) | 89.0 (35.1) | 95.5 (37.6) | 89.0 (35.1) | 82.5 (32.5) |
| | | **^^^ Maximum Z – Vertical CG Height Restriction Values ^^^** | | | | |
| | | **NOTE: Minimum Z – Vertical Height Restriction Value is 30.5 cm (12 in) for all models above** | | | | |

CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS (continued)

**K2XX HD C/K 25903**
**Michelin LTX AT2 LT265/70R18/E (QGM)**
**X = Longitudinal, Y = Lateral and Z = Vertical Center of Gravity (CG) Restrictions**

| | | @ Y – Lateral CG Offset Location cm (in) | | | | |
|---|---|---|---|---|---|---|
| **@ Maximum X Longitudinal CG Location from Front Axle CL cm (in)** | **Model Identification** | **-10 (-3.9)** | **-5 (-2)** | **0** | **5 (2)** | **10 (3.9)** |
| **140 (55.1)** | C25903 | 81.7 (32.2) | 86.5 (34.1) | 86.5 (34.1) | 86.5 (34.1) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 86.5 (34.1) | 86.5 (34.1) | 86.5 (34.1) | 81.7 (32.2) |
| **150 (59.1)** | C25903 | 86.5 (34.1) | 86.5 (34.1) | 88.2 (34.7) | 86.5 (34.1) | 86.5 (34.1) |
| | K25903 | 86.5 (34.1) | 86.5 (34.1) | 88.2 (34.7) | 86.5 (34.1) | 86.5 (34.1) |
| **160 (63.0)** | C25903 | 86.5 (34.1) | 90.0 (35.4) | 90.0 (35.4) | 90.0 (35.4) | 86.5 (34.1) |
| | K25903 | 86.5 (34.1) | 90.0 (35.4) | 90.0 (35.4) | 90.0 (35.4) | 86.5 (34.1) |
| **170 (66.9)** | C25903 | 86.5 (34.1) | 89.0 (35.1) | 91.8 (36.2) | 89.0 (35.1) | 86.5 (34.1) |
| | K25903 | 86.5 (34.1) | 89.0 (35.1) | 91.8 (36.2) | 89.0 (35.1) | 86.5 (34.1) |
| **180 (70.9)** | C25903 | 86.5 (34.1) | 86.5 (34.1) | 92.6 (36.5) | 86.5 (34.1) | 86.5 (34.1) |
| | K25903 | 86.5 (34.1) | 86.5 (34.1) | 92.6 (36.5) | 86.5 (34.1) | 86.5 (34.1) |
| **190 (74.8)** | C25903 | 86.5 (34.1) | 86.5 (34.1) | 89.7 (35.3) | 86.5 (34.1) | 86.5 (34.1) |
| | K25903 | 86.5 (34.1) | 86.5 (34.1) | 89.7 (35.3) | 86.5 (34.1) | 86.5 (34.1) |
| **200 (78.7)** | C25903 | 86.5 (34.1) | 86.5 (34.1) | 88.6 (34.9) | 86.5 (34.1) | 86.5 (34.1) |
| | K25903 | 86.5 (34.1) | 86.5 (34.1) | 88.6 (34.9) | 86.5 (34.1) | 86.5 (34.1) |
| | | **^^^ Maximum Z – Vertical CG Height Restriction Values ^^^** | | | | |
| | | **NOTE: Minimum Z – Vertical Height Restriction Value is 30.5 cm (12 in) for all models above** | | | | |

CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS (continued)

**K2XX HD C/K 25943**
**Firestone Transforce HT ALS LT245/75R17/E (QHQ)**
**Bridgestone Duravis M700 AT LT265/70R17/E (QXT)**
**Goodyear Wrangler SR-A ALS LT265/70R18/E (QWF)**
**X = Longitudinal, Y = Lateral and Z = Vertical Center of Gravity (CG) Restrictions**

| | | @ Y – Lateral CG Offset Location cm (in) | | | | |
|---|---|---|---|---|---|---|
| **@ Maximum X Longitudinal CG Location from Front Axle CL cm (in)** | **Model Identification** | **-10 (-3.9)** | **-5 (-2)** | **0** | **5 (2)** | **10 (3.9)** |
| **160 (63.0)** | C25943 | 84.5 (33.3) | 87.0 (34.3) | 87.5 (34.5) | 87.0 (34.3) | 84.5 (33.3) |
| | K25943 | 84.5 (33.3) | 87.0 (34.3) | 87.5 (34.5) | 87.0 (34.3) | 84.5 (33.3) |
| **170 (66.9)** | C25943 | 84.5 (33.3) | 87.0 (34.3) | 89.5 (35.3) | 87.0 (34.3) | 84.5 (33.3) |
| | K25943 | 84.5 (33.3) | 87.0 (34.3) | 89.5 (35.3) | 87.0 (34.3) | 84.5 (33.3) |
| **180 (70.9)** | C25943 | 84.5 (33.3) | 87.0 (34.3) | 89.5 (35.3) | 87.0 (34.3) | 84.5 (33.3) |
| | K25943 | 84.5 (33.3) | 87.0 (34.3) | 89.5 (35.3) | 87.0 (34.3) | 84.5 (33.3) |
| **190 (74.8)** | C25943 | 84.5 (33.3) | 87.0 (34.3) | 89.5 (35.3) | 87.0 (34.3) | 84.5 (33.3) |
| | K25943 | 84.5 (33.3) | 87.0 (34.3) | 89.5 (35.3) | 87.0 (34.3) | 84.5 (33.3) |
| **200 (78.7)** | C25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| | K25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| **210 (82.7)** | C25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| | K25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| **220 (86.6)** | C25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| | K25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| **230 (90.6)** | C25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| | K25943 | 89.5 (35.3) | 91.5 (36.0) | 93.5 (36.8) | 91.5 (36.0) | 89.5 (35.3) |
| **240 (94.5)** | C25943 | 79.5 (31.3) | 84.5 (35.5) | 91.6 (36.1) | 84.5 (35.5) | 79.5 (31.3) |
| | K25943 | 79.5 (31.3) | 84.5 (35.5) | 91.6 (36.1) | 84.5 (35.5) | 79.5 (31.3) |
| | | **^^^ Maximum Z – Vertical CG Height Restriction Values ^^^** | | | | |
| | | **NOTE: Minimum Z – Vertical Height Restriction Value is 30.5 cm (12 in) for all models above** | | | | |

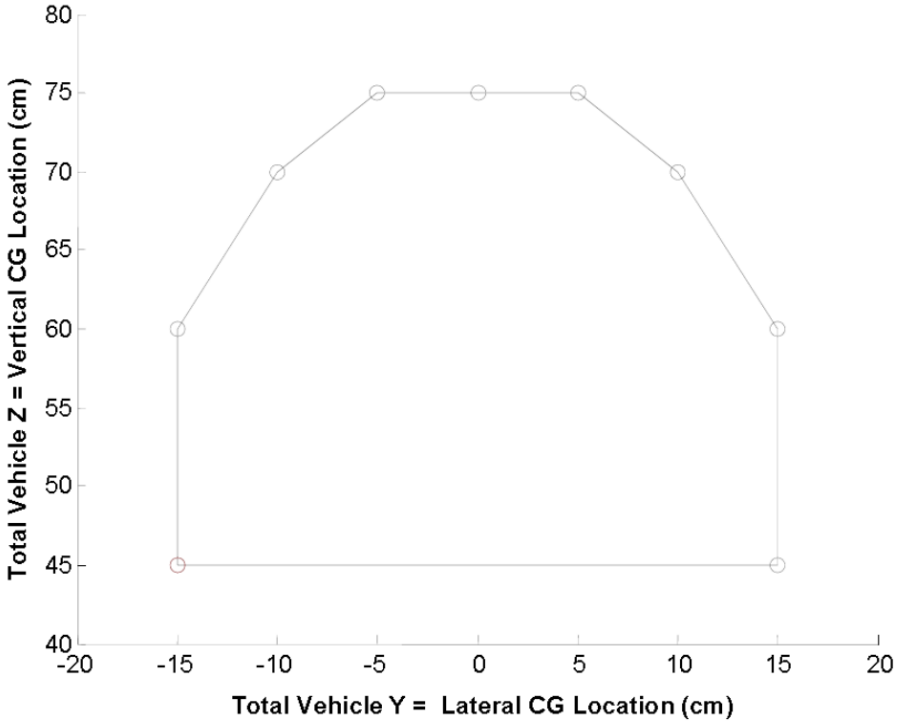
CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS (continued)

**K2XX HD C/K 25943**
**Michelin LTX AT2 LT265/70R18/E (QGM)**
**X = Longitudinal, Y = Lateral and Z = Vertical Center of Gravity (CG) Restrictions**

| | | @ Y – Lateral CG Offset Location cm (in) | | | | |
|---|---|---|---|---|---|---|
| **@ Maximum X Longitudinal CG Location from Front Axle CL cm (in)** | **Model Identification** | **-10 (-3.9)** | **-5 (-2)** | **0** | **5 (2)** | **10 (3.9)** |
| **150 (59.1)** | C25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| **160 (63.0)** | C25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| **170 (66.9)** | C25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| **180 (70.9)** | C25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 81.7 (32.2) | 85.5 (33.7) | 81.7 (32.2) | 81.7 (32.2) |
| **190 (74.8)** | C25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| **200 (78.7)** | C25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| **210 (82.7)** | C25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| **220 (86.6)** | C25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| | K25903 | 81.7 (32.2) | 86.2 (34.0) | 88.9 (35.0) | 86.2 (34.0) | 81.7 (32.2) |
| **230 (90.6)** | C25943 | 80.1 (31.6) | 80.1 (31.6) | 80.1 (31.6) | 80.1 (31.6) | 80.1 (31.6) |
| | K25943 | 80.1 (31.6) | 80.1 (31.6) | 80.1 (31.6) | 80.1 (31.6) | 80.1 (31.6) |
| | | **^^^ Maximum Z – Vertical CG Height Restriction Values ^^^** | | | | |
| | | **NOTE: Minimum Z – Vertical Height Restriction Value is 30.5 cm (12 in) for all models above** | | | | |

CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS (continued)

**FMVSS 126 Compliance Certification**
**Y = Lateral and Z = Vertical Center of Gravity Restriction**
**Visual Representation EXAMPLE shown in centimeters**




**For upfitter use and applicable to CMVSS 126 and FMVSS 126, the longitudinal and vertical vehicle center of gravity location can be approximated by following the formula below and by referencing data elements within CMVSS 105 and FMVSS 105 – HYDRAULIC AND ELECTRIC BRAKE SYSTEMS or CMVSS 135 and FMVSS 135 LIGHT VEHICLE BRAKE SYSTEMS, ALLOWABLE CENTER OF GRAVITY CHARTS.**

CMVSS 126 and FMVSS 126 – ELECTRONIC STABILITY CONTROL SYSTEMS (continued)

$$d = \frac{[Wrc + Wrb]\ WB}{Wt}$$

$$h = \frac{[h1*Wc + h2*Wb}{Wt}$$

**d** = horizontal distance from front wheels to completed vehicle center of gravity cm (in)
**h** = vertical distance from ground to completed vehicle center of gravity cm (in)
**Wrc** = rear component of Chassis weight kg (lb)
**Wrb** = rear component of body weight kg (lb)
**WB** = vehicle wheelbase cm (in)
**Wt** = total weight of chassis and body kg (lb)
**h1** = center of gravity height from ground of the Bare Chassis:
Based on model applicability, refer to the h1 values listed in this document within: CMVSS 105/FMVSS 105 - HYDRAULIC AND ELECTRIC BRAKE SYSTEMS, or CMVSS 135/FMVSS 135 - LIGHT VEHICLE BRAKE SYSTEMS.
**Wc** = total weight of vehicle as manufactured by General Motors kg (lb)
**h2** = center of gravity height of body from ground cm (in)
**Wb** = total weight of body kg (lb)

In addition, the equation to calculate the lateral vehicle center of gravity location from center of vehicle can be estimated by using the following formula:

> Lateral offset from centerline of vehicle = [{(RF corner weight kg (lb) + RR corner weight) kg (lb) / (total vehicle weight kg (lb))} - 0.5] * vehicle track width of 152 cm (59.8 in).

If the lateral offset from centerline of vehicle calculation above results in a positive number, the lateral vehicle offset center of gravity is toward the right side (passenger) of the vehicle.

Alternatively, if the lateral offset from centerline of vehicle calculation above results in a negative number, the lateral vehicle offset center of gravity is toward the left side (driver) of the vehicle.

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

TYPE 2: The following statement is applicable to all types of Incomplete Vehicles contained in this document with a 3500 kg (7,716 lbs.) GVWR or less, (unless otherwise noted on the cover).

This incomplete vehicle when completed will conform to CMVSS 135 and FMVSS 135 provided it is completed in accordance with the following specific conditions by the (intermediate and) final stage manufacturer:

A. Providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems, as manufactured by General Motors, including but not limited to those listed below (if equipped):

| | |
|---|---|
| Anti-Lock Brake System<br>Brake assemblies and components (service/ parking) - (i.e. power boosters, master cylinder, wheel cylinder, calipers, rotors, wheel speed sensor, wheel speed sensor wiring, brake lining etc.)<br>Brake pedal, brake switch, parking brake hand lever or park brake switch and related mechanical components<br>Brake system electrical controls and logic<br>Gauges and warning devices, and statements<br>Hydraulic brake fluid and reservoirs | Hydraulic brake lines, fittings and routings<br>Hydraulic brake valves and components<br>Master cylinder-warning statement<br>Owner Manual instructions<br>Parking brake actuator and related mechanical components<br>Power steering or vacuum lines and routing<br>Power steering or vacuum pump<br>Tires and Wheels<br>Vacuum brake lines, fittings and routings<br>Vehicle |

B. GVWR, GAWR front and rear weight ratings as listed on the Incomplete Vehicle Label affixed to the front cover of this document must not be exceeded.

C. The center of gravity of the total vehicle falls within the areas referenced on the "ALLOWABLE CENTER OF GRAVITY CHART" that follows. Instructions for determining the allowable center of gravity variation are listed below:

These charts detail the envelope of allowable center of gravity variation for completed vehicles. This is significant for the lightly loaded portion of CMVSS 135 and FMVSS 135, which is defined as curb plus 181.4 kg (400 lb) distributed in the driver-passenger area of the vehicle.
The lightly loaded center of gravity of complete vehicles needs to be restricted so it will meet CMVSS 135 and FMVSS 135 stopping distances. The laden center of gravity does not need to be specified as it is controlled within the CMVSS 135 and FMVSS 135 test procedure by specific instructions as to how ballast is to be placed (while height is not controlled, it is assumed that for test purposes it would be reasonable).

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS (continued)

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

For Body Builder's use, the center of gravity location can be approximated by the following formula:

$$d = \frac{[Wrc + Wrb + [(Hp)(Wp)/WB]]\ WB}{Wt}$$

$$h = \frac{[h1Wc + h2Wb + (h3)(Wp)]}{Wt}$$

**d** = horizontal distance from front wheels to completed vehicle center of gravity mm (in)

**h** = vertical distance from ground to completed vehicle center of gravity mm (in)

**Wrc** = rear component of Chassis weight kg (lbs.)

**Wrb** = rear component of body weight kg (lbs.)

**WB** = vehicle wheelbase mm (in)

**Wt** = total weight of chassis and body kg (lbs.) plus 181.4 kg (400 lbs.)

**h1** = center of gravity height from ground of the Bare Chassis = 711 mm (28 in)

**Wc** = total weight of Chassis kg (lbs.)

**h2** = center of gravity height of body from ground mm (in)

**Wb** = total weight of body kg (lbs.)

**Wp** = 181.4 kg (400 lbs.) Amount from lightly loaded definition that is evenly distributed in driver passenger area of vehicle.

**Hp** = 1467 mm (57.76 in) Horizontal distance from front axle to center of gravity of 181.4 kg (400 lbs.) evenly distributed in driver-passenger area of vehicle.

**h3** = 948 mm (37.32 in) Vertical center of gravity height of 181.4 kg (400 lbs.) evenly distributed in driver-passenger area for vehicles with 3500 kg (7,716 lbs.) GVWR or less

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS (continued)

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

### CMVSS 135 and FMVSS 135
### ALLOWABLE CENTER OF GRAVITY CHARTS

| Model | GVWR kg (lb) | Brake System | Wheelbase mm (in) | Rear Wheel | Incomplete, Pick-Up Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lbs.) mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | H1 | H2 | A | B | C | D | E | F |
| C15703 | 2948 (6500) | JD9 | 3022.6 (119.0) | SRW | 305 (12.0) | 1219 (48.0) | 1020 (40.2) | 1368 (53.6) | 1851 (72.9) | 2391 (94.1) | 1020 (40.2) | 2391 (94.1) |
| C15703 | 2994 (6600) | JD9 | 3022.6 (119.0) | SRW | 305 (12.0) | 1219 (48.0) | 1020 (40.2) | 1368 (53.6) | 1851 (72.9) | 2391 (94.1) | 1020 (40.2) | 2391 (94.1) |
| C15703 | 3039 (6700) | JD9 | 3022.6 (119.0) | SRW | 305 (12.0) | 1219 (48.0) | 1020 (40.2) | 1368 (53.6) | 1851 (72.9) | 2391 (94.1) | 1020 (40.2) | 2391 (94.1) |
| C15703 | 3062 (6750) | JD9 | 3022.6 (119.0) | SRW | 305 (12.0) | 1219 (48.0) | 1020 (40.2) | 1368 (53.6) | 1851 (72.9) | 2391 (94.1) | 1020 (40.2) | 2391 (94.1) |
| K15703 | 3039 (6700) | JD9 | 3022.6 (119.0) | SRW | 305 (12.0) | 1219 (48.0) | 1020 (40.2) | 1368 (53.6) | 1851 (72.9) | 2405 (94.7) | 1020 (40.2) | 2391 (94.1) |
| K15703 | 3062 (6750) | JD9 | 3022.6 (119.0) | SRW | 305 (12.0) | 1219 (48.0) | 1020 (40.2) | 1368 (53.6) | 1851 (72.9) | 2405 (94.7) | 1020 (40.2) | 2391 (94.1) |
| C15903 | 3039 (6700) | JD9 | 3378.2 (133.0) | SRW | 305 (12.0) | 1219 (48.0) | 1130 (44.5) | 1445 (56.9) | 2020 (79.5) | 2603 (102.5) | 1130 (44.5) | 2603 (102.5) |
| C15903 | 3084 (6800) | JD9 | 3378.2 (133.0) | SRW | 305 (12.0) | 1219 (48.0) | 1130 (44.5) | 1445 (56.9) | 1996 (78.6) | 2603 (102.5) | 1130 (44.5) | 2603 (102.5) |
| K15903 | 3130 (6900) | JD9 | 3378.2 (133.0) | SRW | 305 (12.0) | 1219 (48.0) | 1130 (44.5) | 1445 (56.9) | 1972 (77.6) | 2603 (102.5) | 1130 (44.5) | 2603 (102.5) |
| K15903 | 3175 (7000) | JD9 | 3378.2 (133.0) | SRW | 305 (12.0) | 1219 (48.0) | 1130 (44.5) | 1445 (56.9) | 1948 (76.7) | 2603 (102.5) | 1130 (44.5) | 2603 (102.5) |

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS (continued)

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

### CMVSS 135 and FMVSS 135
### ALLOWABLE CENTER OF GRAVITY CHARTS

| Model | GVWR kg (lb) | Brake System | Wheelbase mm (in) | Rear Wheel | Incomplete, Pick-Up Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lbs.) mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | H1 | H2 | A | B | C | D | E | F |
| C15753 | 3130 (6900) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1503 (59.2) | 2109 (83.0) | 2752 (108.3) | 1219 (48.0) | 2752 (108.3) |
| C15753 | 3175 (7000) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1503 (59.2) | 2084 (82.0) | 2752 (108.3) | 1219 (48.0) | 2752 (108.3) |
| C15753 | 3266 (7200) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 2036 (80.2) | 2752 (108.3) | 1213 (47.8) | 2713 (106.8) |
| C15753 | 3357 (7400) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 1990 (78.3) | 2752 (108.3) | 1213 (47.8) | 2667 (105.0) |
| K15753 | 3221 (7100) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 2060 (81.1) | 2752 (108.3) | 1213 (47.8) | 2736 (107.7) |
| K15753 | 3266 (7200) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 2036 (80.2) | 2752 (108.3) | 1213 (47.8) | 2713 (106.8) |
| K15753 | 3357 (7400) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 1990 (78.3) | 2667 (105.0) | 1213 (47.8) | 2667 (105.0) |
| K15753 | 3447 (7600) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1505 (59.2) | 1947 (76.6) | 2624 (103.3) | 1213 (47.8) | 2624 (103.3) |
| C15543 | 3130 (6900) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1503 (59.2) | 2109 (83.0) | 2752 (108.3) | 1219 (48.0) | 2752 (108.3) |
| C15543 | 3175 (7000) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1503 (59.2) | 2084 (82.0) | 2752 (108.3) | 1219 (48.0) | 2752 (108.3) |

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS (continued)

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

### CMVSS 135 and FMVSS 135
### ALLOWABLE CENTER OF GRAVITY CHARTS

| Model | GVWR kg (lb) | Brake System | Wheelbase mm (in) | Rear Wheel | Incomplete, Pick-Up Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lbs.) mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | H1 | H2 | A | B | C | D | E | F |
| C15543 | 3266 (7200) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 2036 (80.2) | 2713 (106.8) | 1213 (47.8) | 2713 (106.8) |
| C15543 | 3357 (7400) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 1990 (78.3) | 2667 (105.0) | 1213 (47.8) | 2667 (105.0) |
| K15543 | 3221 (7100) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 2060 (81.1) | 2736 (107.7) | 1213 (47.8) | 2736 (107.7) |
| K15543 | 3266 (7200) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 2036 (80.2) | 2713 (106.8) | 1213 (47.8) | 2713 (106.8) |
| K15543 | 3357 (7400) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1504 (59.2) | 1990 (78.3) | 2667 (105.0) | 1213 (47.8) | 2667 (105.0) |
| K15543 | 3447 (7600) | JD9 | 3644.9 (143.5) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1505 (59.2) | 1947 (76.6) | 2624 (103.3) | 1213 (47.8) | 2624 (103.3) |
| C15743 | 3130 (6900) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1287 (50.7) | 1555 (61.2) | 2234 (87.9) | 2888 (113.7) | 1287 (50.7) | 2888 (113.7) |
| C15743 | 3357 (7400) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1287 (50.7) | 1555 (61.2) | 2207 (86.9) | 2884 (113.5) | 1287 (50.7) | 2884 (113.5) |
| C15743 | 3221 (7100) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1287 (50.7) | 1555 (61.2) | 2156 (84.9) | 2832 (111.5) | 1287 (50.7) | 2832 (111.5) |
| C15743 | 3266 (7200) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1287 (50.7) | 1555 (61.2) | 2107 (86.9) | 2784 (109.6) | 1287 (50.7) | 2784 (109.6) |

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS (continued)

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

### CMVSS 135 and FMVSS 135
### ALLOWABLE CENTER OF GRAVITY CHARTS

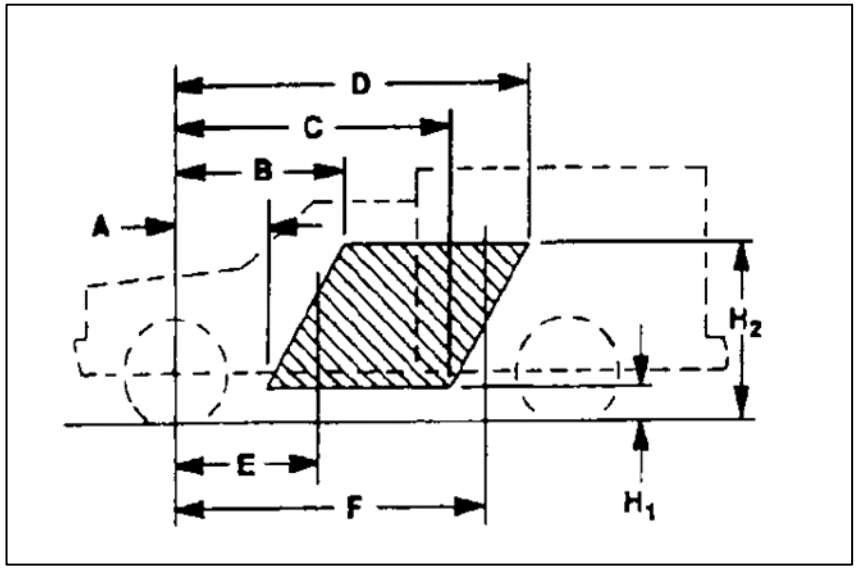
| Model | GVWR kg (lbs.) | Brake System | Wheelbase mm (in) | Rear Wheel | Incomplete, Pick-Up Box Removal, or Snow Plow Prep Package Vehicles | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Coordinates of Allowable C/G Variation at CMVSS/FMVSS Unladen, Curb Weight + 181.4 kg (400 lbs.) mm (in) | | | | | | Fwd C/G Limit mm (in) | RRwd C/G Limit Mm (in) |
| | | | | | H1 | H2 | A | B | C | D | E | F |
| K15743 | 3221 (7100) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1556 (61.3) | 2181 (85.9) | 2858 (112.5) | 1287 (50.7) | 2858 (112.5) |
| K15743 | 3266 (7200) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1213 (47.8) | 1556 (61.3) | 2156 (84.9) | 2832 (111.5) | 1287 (50.7) | 2832 (111.5) |
| K15743 | 3221 (7100) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1287 (50.7) | 1556 (61.3) | 2107 (82.9) | 2784 (109.6) | 1287 (50.7) | 2784 (109.6) |
| K15743 | 3266 (7200) | JD9 | 3886.2 (153) | SRW | 305 (12.0) | 1219 (48.0) | 1287 (50.7) | 1557 (61.3) | 2061 (81.1) | 2737 (107.8) | 1287 (50.7) | 2737 (107.8) |

ABS = Anti-Lock Brake System
Brake Systems: Vacuum Powered Boosters - JF3, JF7 and JD9. Hybrid – J92.
C/G = Center of Gravity
DRW = Dual Rear Wheel
SRW = Single Rear Wheel
VSES = Vehicle Stability Enhancement System

## CMVSS 135 and FMVSS 135 – LIGHT VEHICLE BRAKE SYSTEMS (continued)

Applies to all types of Incomplete Vehicles Contained in this Document 3500 kg (7,716 lbs.) GVWR or less

### CMVSS 135 and FMVSS 135
### ALLOWABLE CENTER OF GRAVITY CHARTS




**C/G of vehicle in CMVSS or FMVSS unladen condition [Curb + 181.4 kg. (400 lb)] must be inside shaded area – that is, the C/G must be within the trapezoid formed by the coordinates A, B, C, D, H1, & H2, plus the C/G must be to the rear of vertical line E and forward of vertical line F.**

## CMVSS 204 and FMVSS 204 – STEERING CONTROL REARWARD DISPLACEMENT

**TYPE 1: The following statement is applicable to all types of incomplete vehicles contained in this document, 4536 kg (10,000 lb) GVWR or less and an unloaded vehicle weight of 2495 kg (5,500 lb) or less (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 204 and FMVSS 204 providing the "Maximum Unloaded Vehicle Weight" (found in Table A) is not exceeded, and no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below that would affect the steering control system displacement in a 48 k.p.h. (30 m.p.h.) fixed barrier impact:

| | |
|---|---|
| Frame assembly and mounting system | Steering wheel, column, and shaft assembly |
| Front impact bar assembly and mounting system Hood | Tires and wheels |
| and hinge assemblies | Vehicle/body front-end sheet metal components |
| Powertrain and powertrain mounting system Steering | Vehicle/body front-end structural components |
| control system including related hardware | Vehicle/body roof structure and components |

**TYPE 3: The following statement is applicable to any type of incomplete vehicle contained in this document, 4536 kg (10,000 lbs.) GVWR or less, with any bumper delete option (unless otherwise noted on the cover.)**

Conformity with CMVSS 204 and FMVSS 204 cannot be determined based upon the components supplied on the incomplete vehicle, and General Motors makes no representation to conformity with the standard.

## CMVSS 208 AND FMVSS 208 – OCCUPANT CRASH PROTECTION

**TYPE 1: The following statement is applicable to all types of vehicles contained in this document (unless otherwise noted on the cover) having an unloaded vehicle weight of 2495 kg (5,500 lb) or less and a GVWR of 3856 kg (8,500 lb) or less (except for chassis cab models with KL6 or KL8 alternative fuels option), and built by General Motors with complete seats and seat belt assemblies. For vehicles GVWR of 3856 kg (8,500 lbs.) or less, the vehicle model number as shown on the label on the cover must be included on the final state manufacturer's certification label.**

A. The front seating positions provided by General Motors will conform to the requirements of CMVSS 208 and FMVSS 208, providing the "Maximum Unloaded Vehicle Weight" (found in Table A) is not exceeded, and no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital special clearances of the Owner Manual instructions and components, assemblies or systems including but not limited to those listed below:

    1. The number, location or configuration of the designated seating positions; and
    2. The number, placement, installation or model number of the seat belt assemblies provided; and

CMVSS 208 and FMVSS 208 — continued from previous page)

3. The instrument panel or its mounting, the steering column/shaft or its mounting, the knee bolster or its mounting, the steering wheel, horn pad, driver air bag module or its mounting and covering, passenger air bag module or its mounting or covering (if equipped), air bag crash sensors. Note: For the "Passenger Sensing System" (if equipped), modifying or putting a padded cover on the passenger seat can affect the performance of this system.
4. Sensor Diagnostic Module (SDM), and all air bag system wiring. Do not relocate or move the SDM, or air bag crash sensors. Do not obstruct the path of air bag deployment. Do not mount any components that produce more than a 20 Gauss magnetic field as measured at the SDM. Speakers/magnets must be located at least 12.7 cm (5 in) from the SDM. You must disconnect the SDM before doing any welding on the vehicle, otherwise do not disconnect the SDM. **Caution: To help avoid Personal Injury due to unwanted air bag inflation**, **observe the following precautions!** Do not weld, solder, braze, hammer, machine, drill, heat, electrical splice, add onto, remove, relocate, test, paint, loosen or in any way alter air bag components or wiring or fuses. Carpet may be put over the SDM if an appropriate moisture barrier (such as rubber matted backing) is supplied. When performing any operation around air bag components or wiring including but not limited to any operations around the instrument panel, electrical wiring and fuse block, steering column/wheel, and the engine compartment you must disable the air bag system prior to the operation. If the vehicle is equipped with an SDM, you must disable the air bag system prior to installing intermediate or final stage manufacturer components. Note: Striking or dropping a powered SDM may cause air bag deployment. The air bag system must be enabled after operation completion. This must be verified before shipping the vehicle. Instructions for disabling and enabling the air bag system can be found in the GM service manual. **Note: All connectors that have wiring routed between the SDM and an air bag inflator module have yellow connectors.**
5. If the sunshade is removed or altered, or if the intermediate or final stage manufacturer installs the sunshade, a new Inflatable Restraints System Caution label must be installed per CMVSS 208 and FMVSS 208 requirements. In order to be in compliance with CMVSS 208 and FMVSS 208 no other label shall be installed on the same side of the sun visor as the Air Bag Caution label. The instrument panel temporary label must not be removed.
6. The vehicle frame, front bumper system, front sheet metal or other front structure, roof structure, doors, floor pan, dash panel, cowl structure, driveline or contents of the engine compartment by any incomplete or final state manufacturer which would result in any difference from the modified vehicle's deceleration if the modified vehicle were to be subjected to barrier impact tests conducted per CMVSS 208 and FMVSS 208.

B. The rear seating positions by General Motors will conform to CMVSS 208 and FMVSS 208 providing no alterations are made to the number, location or configuration of the designated seats/seating positions or to the number, placement, installation or model number of the seat belt assemblies of this incomplete vehicle.

C. Intermediate or final stage manufacturers are advised that mounting hardware ahead of the bumper/radiator, such as, but not limited to, plows, winches, brush guards, etc., may affect air bag sensing and resultant performance.

(CMVSS 208 and FMVSS 208 — continued from previous page)

**TYPE 1: The following statement is applicable to all types of vehicles contained in this document (unless otherwise noted on the cover) having either an unloaded vehicle weight greater than 2495 kg (5,500 lb) or a GVWR greater than 3856 kg (8,500 lb), and built by General Motors with complete seats and seat belt assemblies.**

This incomplete vehicle, when completed, will conform to CMVSS 204 and FMVSS 204 providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

| | |
|---|---|
| Owner Manual instructions | Seat belt anchorages |
| Seat anchorages | Seat belt assemblies |
| Seat assemblies | Seat belt warning system |

**For vehicles equipped with an optional Inflatable Restraint System, refer to additional information in the TYPE 1 statement immediately preceding.**

**TYPE 3: The following statement is applicable to all types of incomplete vehicles contained in this document with respect to second or third-row seats installed by the intermediate or final state manufacturer, and all chassis cab models with a GVWR of 3856 kg (8,500 lbs.) or less with options KL6 or KL8 alternative fuel (unless otherwise noted on the cover).**

Conformity with CMVSS 208 and FMVSS 208 cannot be determined based upon the components supplied on the incomplete vehicle, and General Motors makes no representation to conformity with the standard.

## CMVSS 212 AND FMVSS 212 – WINDSHIELD MOUNTING

**TYPE 1: The following statement is applicable to all types of incomplete vehicles contained in this document (unless otherwise noted on the cover) with a 4536 kg (10,000 lbs.) GVWR or less, when completed will conform to CMVSS 212 and FMVSS 212 if:**

A. No alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

| | |
|---|---|
| Air bag crash sensors, connectors<br>Air bag system including covers and module<br>Air bag system wiring harnesses and fuses/relays<br>Dash panel and cowl assembly<br>Doors and hinge assemblies<br>Frame assembly and mounting system<br>Front impact bar assembly and mounting system<br>Hood and hinge assemblies<br>Powertrain and powertrain mounting system<br>Seat anchorages<br>Seat assemblies | Seat belt anchorages<br>Seat belt assemblies<br>Sensor Diagnostic Module (SDM) and retainers/brackets Steering control system including related hardware<br>Steering wheel, column, and shaft assembly<br>Sun visor assemblies<br>Vehicle/body front sheet metal – components/reinforcements<br>Vehicle/body front structural – components/reinforcements<br>Vehicle/body roof structure and components<br>Windshield and windshield mounting system<br>Windshield frame/frame reinforcement |

,

B. The body and/or equipment installed must not exceed the completed vehicle's unloaded vehicle weight, maximum body weight, maximum center of gravity height, and maximum body height required values specified Table A.

C. The clearance between the rear most part of the cab and the front of the body is not less than the minimum cab to body clearance specified in Table A.

D. The minimum vertical clearance between the cab roof and any portion of the installed body or accessories that extends over the cab roof must not be less than 20 cm (8 in).

E. During a 48 k.p.h. (30 m.p.h.) frontal barrier impact test, no component installed by any intermediate or final state manufacturer shall move forward from its permanently mounted position.

## CMVSS 219 AND FMVSS 219 – WINDSHIELD ZONE INTRUSION

**TYPE 1: The following statement is applicable to all types of incomplete vehicles contained in this document a 4536 kg (10,000 lb) GVWR or less, but not applicable to walk-in vans, motor homes, tow-trucks, ambulance, or other emergency/rescue/medical vehicles equipped for wheelchairs (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 219 and FMVSS 219 providing:

A. No alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems including but not limited to those listed below:

| | |
|---|---|
| Antennae | Hood assembly |
| Body roof structure and components/reinforcements | Hood mounts |
| Body sheet metal components/reinforcements | Motor compartment structure and components |
| Body structural components/reinforcements | Windshield wiper |
| Dash panel and cowl structure | Windshield wiper motor |

B. The vehicle does not exceed the unloaded vehicle weight specified in Table A.

C. During a 48 k.p.h. (30 m.p.h.) frontal barrier impact test:
   1. No component installed by any intermediate or final stage manufacturer shall prevent the hood from folding differently than its designed folding pattern; and
   2. No component installed by any intermediate or final stage manufacturer shall penetrate the windshield or protected zone.

## CMVSS 301 and FMVSS 301 – FUEL SYSTEM INTEGRITY

**Refer to Vehicle Types, GVWRs, and Applicable Statements that follow**

**TYPE 2: The following statement is applicable to all types of incomplete vehicles contained in this document 4536 kg (10,000 lb) GVWR or less with any Incomplete Option (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to CMVSS 301 and FMVSS 301 providing it is completed in accordance with the following specific conditions by the (intermediate and) final stage manufacturer:

A. The following items when installed by General Motors will conform providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems, as manufactured by General Motors, including but not limited to those listed below:

| | |
|---|---|
| Fuel filler door assembly | Fuel tank filler neck/pipe assembly |
| Fuel filter | Fuel tank filler neck/pipe fasteners |
| Fuel hose shields | Fuel tank filler neck/pipe hose clamp/clamp assembly |
| Fuel pipes and hose assemblies | Fuel tank filler neck/pipe housing assembly |
| Fuel system | Fuel tank filler neck/pipe plate |
| Fuel system attaching or protective structure | Fuel tank filler neck/pipe vent hose |
| Fuel system control module | Fuel tank filler neck/pipe vent hose clamp/strap |
| Fuel system fasteners and retainers | Fuel tank meter assembly |
| Fuel tank assembly | Fuel tank shields |
| Fuel tank cap assembly | Fuel vapor lines and canister assembly |
| Fuel tank filler neck hose | |

B. The (intermediate and) final stage manufacturer conforms to the following:

1. A box, platform, or other rear structural assembly must be installed on the back of the vehicle.
2. The rear assembly structure must provide comparable stiffness to the pickup box sold as original equipment as part of the complete vehicle version of this product.
3. The method of rear assembly structure mounting and mount properties (material and structural) are similar to those used to attach the pickup box sold as original equipment as part of the complete vehicle version of this product.
4. The dimension and mass as well as other restrictions (excluding the Maximum Frontal Area) found in MVSS 301 Table A, are not exceeded.

CMVSS 301 and FMVSS 301 – FUEL SYSTEM INTEGRITY (continued)

**Refer to Vehicle Types, GVWRs, and Applicable Statements that follow**

C. This incomplete vehicle, when completed, will conform to CMVSS 301 and FMVSS 301 Fuel System Integrity if:

1. No alterations are made to the fuel system and attaching or protective structure, the contents or arrangement of the engine compartment, the powertrain and driveline, the cab structure, the chassis structure, the bumper system, door structure, or tires and wheels.
2. The dimension and mass will, as well as other restrictions (excluding the Maximum Frontal Area) found in MVSS 301Table A are not exceeded.
3. The intermediate or final stage manufacture completes the fuel filler neck and fuel level sender installation(s) according to the "Best Practices" or "Special Applications" (if applicable) sections within the Body Builder Manuals on the www.gmupfitter.com website. If there are additional question please submit via the "Contact Us" form on the website.

4. During all barrier impact tests:
    a) No component installed by any intermediate or final stage manufacture impinges on or causes distortion to the fuel system with sufficient energy to puncture or separate fuel system.
    b) No vehicle modification by any intermediate or final stage manufacture results in any portion of vehicle impinging upon or causing distortion to the fuel system with sufficient energy to puncture or separate the fuel system. Care should be taken that the structural integrity of the vehicle is restored following any modification of the structure.
    c) Any body installed by any intermediate or final stage manufacture is mounted securely to absorb loads and prevent movement relative to the frame which could cause any fuel system component to be punctured, separated or otherwise damaged when tested to applicable CMVSS 301 or FMVSS 301

CMVSS 301 and FMVSS 301 – FUEL SYSTEM INTEGRITY (continued)

**Refer to Vehicle Types, GVWRs, and Applicable Statements that follow**

## Table A

| Model | GVWR kg (lbs.) (RPO | Engine (RPO) | General Body Types | Maximum Center of Gravity Height cm (in) | Maximum Body Height cm (in) | Maximum Unloaded Vehicle Weight (Completed Vehicle Maximum Weight) kg (lbs.) | Maximum Body Weight kg (lbs.) | Maximum Frontal Area $M^2$ ($ft^2$) |
|---|---|---|---|---|---|---|---|---|
| **C15903 Reg. Cab** | 3,039 (6,700) (C3J) | 4.3L GAS (LV3) | Service Body | 35.6 (14.0) above the frame | Under 157.5 cm (62.0) | 2472 (5450) | 499 (1,100) | 3.6 (38) |
| **C15903 Reg. Cab** | 3,130 (6,900) (C5H) | 4.3L GAS (LV3) | Service Body | 35.6 (14.0) above the frame | Under 157.5 cm (62.0) | 2472 (5450) | 499 (1,100) | 3.6 (38) |
| **K15903 Reg. Cab** | 3,084 (6,800) (C5U) | 5.3L GAS (L83) | Service Body | 35.6 (14.0) above the frame | Under 157.5 cm (62.0) | 2699 (5950) | 499 (1,100) | 3.6 (38) |
| **K15903 Reg. Cab** | 3,175 (7,000) C5W) | 5.3L GAS (L83) | Service Body | 35.6 (14.0) above the frame | Under 157.5 cm (62.0) | 2699 (5950) | 499 (1,100) | 3.6 (38) |
| **C25903 Reg. Cab** | 4,218 (9,300) (G4A) | 6.0 L GAS (L96) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 3927 (8640) | 816 (1,800) | Not Applicable |
| **C25903 Reg. Cab** | 4,491 (9,900) | 6.6 L Diesel (LML) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4200 (9240) | 1179 (2600) | 4 (44) |
| **C25903 Reg. Cab** | 4,536 (10,000) (C7A) | 6.0 L GAS (l96) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4245 (9340) | 1179 (2600) | Not Applicable |
| | | | | | | | | |

CMVSS 301 and FMVSS 301 – FUEL SYSTEM INTEGRITY (continued)

**Refer to Vehicle Types, GVWRs, and Applicable Statements that follow**

## Table A

| Model | GVWR kg (lbs.) (RPO | Engine (RPO) | General Body Types | Maximum Center of Gravity Height cm (in) | Maximum Body Height cm (in) | Maximum Unloaded Vehicle Weight (Completed Vehicle Maximum Weight) kg (lbs.) | Maximum Body Weight kg (lbs.) | Maximum Frontal Area $M^2$ ($ft^2$) |
|---|---|---|---|---|---|---|---|---|
| **C25943 Crew Cab** | 4,309 (9500) (GEH) | 6.0L GAS (L96) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4108 (8840) | 816 (1800) | Not Applicable |
| **C25943 Crew Cab** | 4,536 (10,000) (C7A) | 6.6 L Diesel (LML) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4218 (8840) | 1179 (2600) | 4 (44) |
| **C25953 Dbl. Cab** | 4,309 (9500) (GEH) | 6.0L GAS (L96) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4108 (8840) | 816 (1800) | Not Applicable |
| **C25953 Dbl. Cab** | 4,536 (10,000) (C7A) | 6.6 L Diesel (LML) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4218 (8840) | 1179 (2600) | 4 (44) |
| **K25903 Reg. Cab** | 4,309 (9500) (GEH) | 6.0 L GAS (L96) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4018 (8840) | 816 (1,800) | Not Applicable |
| **K25903 Reg. Cab** | 4,491 (9,900) (C4M) | 6.6 L Diesel (LML) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4200 (9240) | 1179 (2600) | 4 (44) |
| **K25943 Crew Cab** | 4,491 (9,900) (C4M) | 6.0 L GAS (L96) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4018 (8840) | 816 (1,800) | Not Applicable |
| **K25943 Crew Cab** | 4,536 (10,000) (C7A) | 6.6 L Diesel (LML) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4200 (9240) | 1179 (2600) | 4 (44) |

CMVSS 301 and FMVSS 301 – FUEL SYSTEM INTEGRITY (continued)

**Refer to Vehicle Types, GVWRs, and Applicable Statements that follow**

## Table A

| Model | GVWR kg (lbs.) (RPO | Engine (RPO) | General Body Types | Maximum Center of Gravity Height cm (in) | Maximum Body Height cm (in) | Maximum Unloaded Vehicle Weight (Completed Vehicle Maximum Weight) kg (lbs.) | Maximum Body Weight kg (lbs.) | Maximum Frontal Area $M^2$ ($ft^2$) |
|---|---|---|---|---|---|---|---|---|
| **K25953 Dbl. Cab** | 4,309 (9500) (GEH) | 6.0L GAS (L96) | Service Body | 51.6 (20.3) above the frame | 157.5 cm (62.0) and over | 4108 (8840) | 816 (1800) | Not Applicable |
| **K25953 Dbl. Cab** | 4,536 (10,000) (C7A) | 6.6 L Diesel (LML) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4218 (8840) | 1179 (2600) | 4 (44) |
| **C35943 Crew Cab** | 4,536 (10,000) (C7A) | 6.0L GAS (L96) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4245 (9340) | 1179 (2600) | Not Applicable |
| **C35953 Dbl. Cab** | 4,536 (10,000) (C7A) | 6.0L GAS (L96) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4245 (9340) | 1179 (2600) | Not Applicable |
| **K35903 Reg. Cab** | 4,536 (10,000) (C7A) | 6.0L GAS (L96) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4245 (9340) | 1179 (2600) | Not Applicable |
| **K35953 Dbl. Cab** | 4,536 (10,000) (C7A) | 6.0L GAS (L96) | Service Body | 35.6 (14.0) above the frame | 157.5 cm (62.0) and over | 4245 (9340) | 1179 (2600) | Not Applicable |

**NOTES:**

**Table "A" above applies to ONLY incomplete vehicles (RPO: &VXT) as manufactured by GM without pick-up Boxes (RPO: &ZW9).**

- On page 2 within this document, before each vehicle illustration and after the word TYPE, is a list of types of vehicles into which the incomplete vehicle is designed to be manufactured. For the allowable vehicle TYPE(s), CMVSS 301 and FMVSS 301 only applies to vehicles with a 4536 kg (10,000 lb) GVWR or less. As a result, Table A does not include data for GVWRs exceeding 4536 kg (10,000 lb) GVWR.
- For all included models, the minimum cab to body clearance is 7.6 cm (3.0 in)
- CA (back of cab sheet metal to centerline of rear axle dimensions) are located within the "General Arrangement" section found within the GM Upfitter Integration website located at www.gmupfitter.com
- *The Maximum Frontal Area column applies to: PART II, U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATIONS.
- The completed vehicle Maximum Unloaded Vehicle (Curb) Weight, and/or GVWR, should not be exceeded. If any of these restrictions are exceeded, re-certification by the final stage manufacturer will be required.
- The Maximum Body Weight equals the Maximum Unloaded Vehicle (curb) Weight minus the incomplete Cab & Chassis (curb) weight as manufactured by GM. The actual vehicle (curb) weight must be determined by weighing the vehicle with fuel and fluids filled, minus occupants and cargo. The Maximum Body Weight in Table A is based on the maximum possible incomplete Cab & Chassis (curb) weight as manufactured by GM. It may be permissible to exceed the Maximum Body Weight (as stated in Table A), provided the Maximum Unloaded Vehicle (curb) Weight (as stated in Table A) is not exceeded at final stage manufacturer completion.
- Also see the Vehicle Emission Control Information Label in the vehicle engine compartment for maximum completed vehicle curb weight, GVWR, and frontal area restrictions, if applicable.
- Note: WB refers to wheelbase; GVWR refers to Gross Vehicle Weight Rating

PART II

# U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATIONS

Incomplete vehicles come in three major classifications: (1) Light Duty Trucks (Light and Medium Duty in California) are certified by the primary manufacturer and the vehicle is labeled as being in compliance with emission and fuel economy requirements. (2) Heavy Duty Vehicles are required to have an engine certified by the engine manufacturer and the engine is labeled as being in compliance with emission and fuel economy requirements. (3) Light Duty Vehicles certified and labeled by the intermediate or final stage vehicle manufacturer as being in compliance with emission and fuel economy requirements.

> Reference PART I CMVSS 301 and FMVSS 301 Table A, and PART II Table B. The completed vehicle Maximum Unloaded Vehicle (Curb) Weight, GVWR, and/or Maximum Frontal Area restrictions shown in Tables A and B should not be exceeded. If any of these restrictions are exceeded, re-certification by the final stage manufacturer will be required.

In addition, all gasoline/gasoline-ethanol blend powered Federal/California Light Duty, Medium Duty and Heavy Duty Vehicles are required to have an approved fuel evaporative emission control system. Vehicles certified to Heavy Duty emission standards also require special evaporative emission labeling. In order to assure that Environmental Protection Agency (EPA), National Highway Traffic Safety Administration (NHTSA), California and Canada Emission Certification and/or Fuel Economy regulations are met, this vehicle must be completed in strict accordance with all instructions contained in this document, especially the following instructions which relate to:

## EMISSION RELATED COMPONENTS

**TYPE 1: The following statement is applicable to all types of incomplete vehicles contained in this document (unless otherwise noted on the cover).**

A. This incomplete vehicle, when completed, will conform to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS / FUEL ECONOMY REGULATIONS providing the vehicle is completed in strict accordance with all statements included in this document, especially those that relate to: "EMISSION RELATED COMPONENTS, and no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the components, assemblies or systems, as manufactured by General Motors, including but not limited to those listed below (if equipped):

| | |
|---|---|
| Air Injection Reaction (AIR) System<br>Axle<br>Brake System<br>Catalytic Converter<br>Components for All Wheel Drive (AWD) System: axle, Power Take-Off Unit (PTU), prop-shaft<br>Diesel Exhaust Emission Reduction Fluid (DEF) system, including, but not limited to: associated plumbing, fill neck assembly heated delivery line, heater, injector, level sensor, pump, sensors, tank temperature sensor<br>Diesel Exhaust System, including, but not limited to: NOx Sensors, NOx Sensor Control Module, Diesel Exhaust (HCI) Direct Fuel Injector System, associated plumbing, injectors, injector controller and calibrations<br>Diesel/Bio-Diesel blend Particulate Filter (DPF) system, including, but not limited to: diesel/biodiesel blend particulate filter assembly diesel/biodiesel blend oxidation catalyst assembly, exhaust system pressure differential assembly and/or plumbing, exhaust temperature sensor<br>Engine Assembly, including, but not limited to: cooling fan and drive system, | crankcase emission control system, evaporative emission control system, Exhaust Gas Recirculation (EGR) system, fuel delivery and injection system, glow plugs, Glow Plug Control Module (GPCM), ignition system, Positive Crankcase Ventilation (PCV) system<br>Engine Electronics, including, but not limited to: coolant temperature sensor, ECM/GPCM/PCM/VCM, engine speed sensor, mass air flow sensor, calibrations/software<br>Exhaust oxygen sensors<br>Exhaust system<br>Intake System, including, but not limited to: air induction components/system ducts, filter, mass air flow sensor, intake air heater<br>Onboard Diagnostics Emission System<br>Tires and Wheels<br>Transaxle/Transmission Assembly<br>Transaxle/Transmission Electronics, including, but not limited to: calibrations/software Transmission Control Module (TCM)<br>Turbo Charging System, associated equipment and controls |

NOTE: <u>The Tailpipe Rear Cooler Assembly is non-emissions related.</u> If equipped, to ensure adequate control of exhaust temperature, the intermediate or final stage manufacturer must complete tailpipe (loose kit) installations according to the instructions provided.

B. Cold tire pressure as listed for front and rear on the Incomplete Vehicle Label affixed to the front cover of this document must be maintained.

C. GVWR, GAWR front and rear weight ratings as listed on the Incomplete Vehicle Label affixed to the front cover of this document must not be exceeded.

PART II

Table B

| Model | GVWR kg (lbs.) (RPO | Engine (RPO) | Maximum Unloaded Vehicle Weight kg (lbs.) | Service Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Dump Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Platform with Bulk Head Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Hi-Cube Van Body Type Maximum Frontal Area $m^2$ ($ft^2$) |
|---|---|---|---|---|---|---|---|
| **C35903 Reg. Cab** | 5,035 (11,000) (JFN) | 6.6 L Diesel (LML) | 4,509 (9,940) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C35903 Reg. Cab** | 5,908 (13,025) (CHX) | 6.6 L Diesel (LML) | 4,990 (11,000) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C35943 Crew Cab** | 5,171 (11,400) (C7W) | 6.6 L Diesel (LML) | 4,509 (9,900) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C35943 Crew Cab** | 5,908 (13,025) (CHX) | 6.6 L Diesel (LML) | 4,990 (11,000) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C35953 Ext. Cab** | 5,080 (11,200) (JF0) | 6.6 L Diesel (LML) | 4,509 (9,900) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C35943 Ext. Cab** | 5,908 (13,025) (CHX) | 6.6 L Diesel (LML) | 4,990 (11,000) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C36003 Reg. Cab** | 5,987 (13,200) (9E5) | 6.6 L Diesel (LML) | 5,125 (11,300) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **C36043 Crew Cab** | 5,987 (13,200) (9E5) | 6.6 L Diesel (LML) | 5,125 (11,300) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |

**Table B (continued)**

| Model | GVWR kg (lbs.) (RPO | Engine (RPO) | Maximum Unloaded Vehicle Weight kg (lbs.) | Service Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Dump Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Platform with Bulk Head Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Hi-Cube Van Body Type Maximum Frontal Area $m^2$ ($ft^2$) |
|---|---|---|---|---|---|---|---|
| **C36403 Reg. Cab** | 5,987 (13,200) (9E5) | 6.6 L Diesel (LML) | 5,125 (11,300) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K35903 Reg. Cab** | 5,035 (11,000) (JFN) | 6.6 L Diesel (LML) | 4,509 (9,940) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K35903 Reg. Cab** | 5,908 (13,025) (CHX) | 6.6 L Diesel (LML) | 4,990 (11,000) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K35943 Crew Cab** | 5,262 (11,600) (C7V) | 6.6 L Diesel (LML) | 4,509 (9,900) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K35943 Crew Cab** | 5,908 (13,025) (CHX) | 6.6 L Diesel (LML) | 4,990 (11,000) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K35953 Ext. Cab** | 5,262 (11,600) (C7V) | 6.6 L Diesel (LML) | 4,509 (9,900) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K35953 Ext. Cab** | 5,908 (13,025) (CHX) | 6.6 L Diesel (LML) | 4,990 (11,000) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K36003 Reg. Cab** | 5,987 (13,200) (9E5) | 6.6 L Diesel (LML) | 5,125 (11,300) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |

**Table B (continued)**

| Model | GVWR kg (lbs.) (RPO | Engine (RPO) | Maximum Unloaded Vehicle Weight kg (lbs.) | Service Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Dump Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Platform with Bulk Head Body Type Maximum Frontal Area $m^2$ ($ft^2$) | Hi-Cube Van Body Type Maximum Frontal Area $m^2$ ($ft^2$) |
|---|---|---|---|---|---|---|---|
| **K36043 Crew Cab** | 5,987 (13,200) (9E5) | 6.6 L Diesel (LML) | 5,125 (11,300) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |
| **K36403 Reg. Cab** | 5,035 (11,000) (JFN) | 6.6 L Diesel (LML) | 4,509 (9,940) | 5.2 (56) | 5.2 (56) | 4.6 (50) | 7.9 (85) |

Notes:

- Table B above applies to ONLY incomplete vehicles (RPO: &VXT) as manufactured by GM without pick-up boxes (RPO: &ZW9).
- On page 2 within this document, before each vehicle illustration and after the word TYPE, is a list of types of vehicles into which the incomplete vehicle is designed to be manufactured.
- For all included models, the maximum cab to body clearance is 7.6 cm (3.0 in)
- CA (back of cab sheet metal to centerline of rear axle dimensions) are located within the GM Upfitter Integration website, “General Arrangement” section, at www.gmupfitter.com or contact the Upfitter Integration Hotline at 1-800- 875-4742.
- * The Maximum Frontal Area columns apply to: PART II, U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA FUEL ECONOMY REGULATIONS.
- The completed vehicle Maximum Unloaded Vehicle (Curb) Weight, and/or GVWR, should not be exceeded. If any of these restrictions are exceeded, re-certification by the final stage manufacturer will be required.
- The Maximum Body Weight equals the Maximum Unloaded Vehicle (curb) Weight minus the incomplete Cab & Chassis (curb) weight as manufactured by GM. The actual vehicle (curb) weight must be determined by weighing the vehicle with fuel and fluids filled, minus occupants and cargo.
- Also see the Vehicle Emission Control Information Label in the vehicle engine compartment for maximum completed vehicle curb weight, GVWR, and frontal area restrictions, if applicable.
- GVWR refers to Gross Vehicle Weight Rating.
- All Federal/California gasoline/gasoline-ethanol blend powered heavy duty vehicles (except those equipped with
- option NJ2, Temporary Fuel Tank or option ZW9, Box Delete) will have an evaporative emission control system that is certified for a fuel tank capacity not to exceed the amount shown on the Vehicle Emission Control Information Label.
- Intermediate or Final Stage Manufacturers wishing to add fuel tank capacity beyond the original equipment fuel tank capacity must contact California Air Resources Board and/or submit a written statement to the EPA Administrator that the Hydrocarbon Storage System has been upgraded according to the requirements of 40 CFR 86.095-35 (g) (2).

D. Compliance with applicable fuel evaporative emissions requirements will be maintained providing the intermediate or final stage manufacturer completes the fuel filler neck and fuel level sender installation(s) according to the "Best Practices" or "Special Applications (if applicable)" sections within the Body Builder Manuals on the www.gmupfitter.com website.

Compliance with applicable fuel evaporative emission requirements will be maintained if no alterations are made to change material or increase the size, length or position of the following non-metallic fuel and evaporative emission hoses:

| | |
|---|---|
| Fuel feed hoses front and rear | Fuel vapor lines at canister |
| Fuel return hoses front and rear | Fuel vapor lines from engine to chassis pipes |
| Fuel tank filler hoses to filler neck | Fuel vapor lines from fuel tank sender to chassis pipes |
| Fuel tank vent hoses to filler neck | |

E. The following is applicable to models with the option NJ2- Temporary Fuel Tank. Vehicles equipped with option NJ2 Temporary Fuel Tank do not have an evaporative emission control system.

Compliance with applicable exhaust and evaporative emission requirements is the responsibility of the final stage manufacturer. General Motors makes no representation as to the conformity with applicable exhaust and evaporative emission requirements based upon components supplied on the incomplete vehicle.

A final stage manufacturer who retains the original equipment gasoline/gasoline-ethanol blend powered engine as certified by General Motors may purchase original equipment evaporative emission control system components (see your GM dealer) necessary for the final stage vehicle to comply with evaporative emission requirements. It is the responsibility of the final stage manufacturer to determine the components necessary to ensure evaporative emissions compliance.

**TYPE 3 The following statement is applicable to all types of incomplete vehicles contained in this document manufactured with a gasoline engine, and having an auxiliary heat exchanger installed in the engine cooling system by a subsequent stage manufacturer (unless otherwise noted on the cover).**

Conformity with CMVSS, U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA FUEL ECONOMY REGULATIONS cannot be determined based upon the components supplied on the incomplete vehicle, and General Motors makes no representation to conformity with the regulations.
NOTE: This non-permitted modification will continually set Service Engine Diagnostic Codes.

**SPECIFICATION FOR FILL PIPES AND OPENINGS OF 2015 AND SUBSEQUENT MODEL MOTOR VEHICLE FUEL TANKS (APPLICABLE ONLY TO CALIFORNIA GASOLINE/GASOLINE-ETHANOL BLEND POWERED VEHICLES)**

**TYPE 2: The following statement is applicable to all types of incomplete vehicles contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to Title 13, California Code of Regulations Section 2235, and the "Specifications for Fill Pipes and Openings of 2015 and subsequent Model Year Motor Vehicle Fuel Tanks", dated March 22, 2012, providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the fuel filler neck(s) and any intermediate or final stage manufacturer completes the fuel filler neck installation(s) according to the instructions which are furnished in the loose parts box.

## Labels

**TYPE 2: The following statement is applicable to all types of incomplete vehicles contained in this document (unless otherwise noted on the cover).**

This incomplete vehicle, when completed, will conform to U.S. EPA, CALIFORNIA, AND CANADIAN EXHAUST & EVAPORATIVE EMISSION REQUIREMENTS AND EPA/NHTSA GREENHOUSE GAS EMISSIONS/FUEL ECONOMY REGULATION labeling requirements providing no alterations are made which affect the function, physical, chemical, or mechanical properties, environment, location or vital spatial clearances of the Emission Control related Information Labels that are permanently affixed. The labels are required by government regulation and must not be obstructed from view or defaced so as to impair their visibility or legibility. In addition, an EPA/DOT Fuel Economy and Environment Label may be affixed to the window glass of the incomplete vehicle as manufactured by General Motors. If equipped, the label must remain in place until this vehicle is received by the ultimate customer.

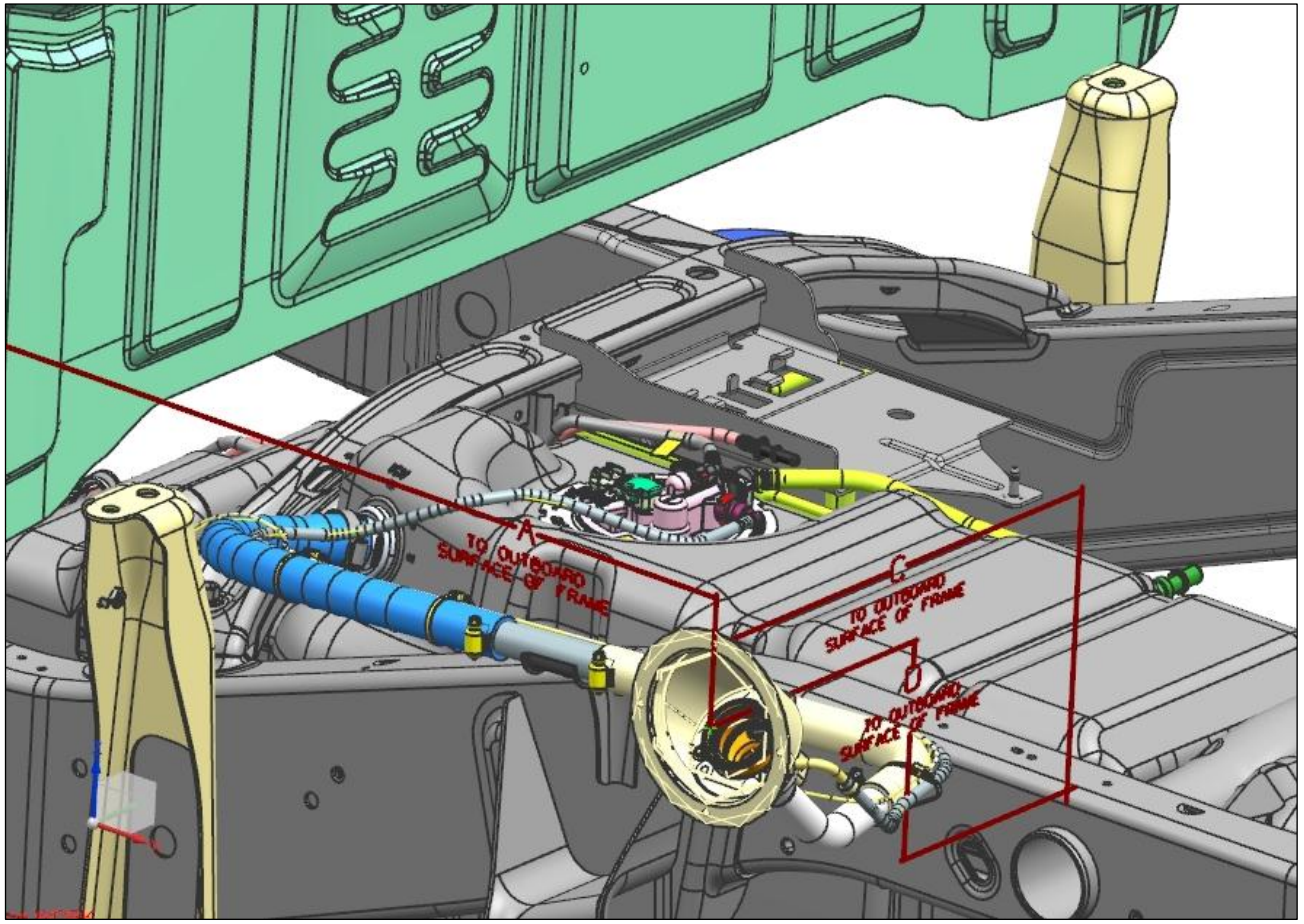
## Pickup Box Removal Fuel Fill System Modifications for Gasoline & Diesel fueled Vehicles

Certain guidelines must be adhered to in modifying the fuel fill and vent system to ensure that the completed product meets the manufacturer's requirements.

**NOTE: Guidelines 2, 3, 5 & 6 currently do not apply to CK HD (2500, 3500) applications. Guidelines 7-10 do not apply to CK LD (1500) applications.**

1. The fuel fill and vent system must be installed such that there is adequate clearance between the fuel fill vent system and the tires under all operating conditions, including protection from road debris. Body attachment brackets must also be located such that there is adequate clearance to all fuel system components, such as the fuel lines and the fuel level sending unit, under all operating conditions.
2. The fuel fill/vent pipe system attached to the vehicle frame upon delivery must be positioned in the location show on PB-53 of this document in order to meet vehicle Federal US EPA and California emission and certification requirements. Fill hose, vent hose, and fill pipe must not be altered.
3. Both the fill and the vent hoses must be routed (and supported, if needed such that there are no sags or kinks. Routing and location shown on page PB-53 of this document are required in order to meet vehicle Federal US EPA and California emission and certification requirements.
4. The fuel fill and vent system should be restrained in the upfit vehicle. This is necessary to avoid chaffing, fretting, rubbing etc. which may cause wear to pipes and hoses.
5. The fuel fill pipe inlet area of the fill pipe assembly maintained at 35 degrees from ground (horizontal).
6. Fuel fill hose clamp between the fuel tank inlet check valve and the fill pipe hose is to be tightened to 3.5 Nm +/-0.5Nm (dynamic) torque (as assembled from the GM Assembly Plant). The clamp between the fuel fill pipe inlet and the fill pipe hose is to be tightened to 5.5Nm +/-0.5 Nm (dynamic) torque (as assembled at the fill pipe supplier).
7. The fuel fill/vent pipe system available from the dealer includes a number of additional hose retaining beads. The pipe can be trimmed at the hose retaining beads to adjust for the various chassis lengths and body widths. The pipes must be trimmed only at locations where a hose retaining bead is present. A hose retaining bead must be present at each pipe to hose interface in a modified fuel fill and vent system. Pipe ends must be free of burrs which may be detrimental to satisfactory assembly and/or function.
8. A minimum of 8.0 inches of fill hose must be maintained between the filler neck and the fuel tank as measured in an outboard direction from the tank surface (at the fill hose nipple) to the outlet end of the filler neck.
9. Both the fill and the vent hoses must be routed (and supported, if needed) such that there are no sags or kinks. Excess hose length may be removed as required provided hose does not kink. As viewed from the filler neck, pipes and hoses must have a min downward slope of 4º of downward slope at any location.
10. Fuel fill hose clamps are to be tightened to 22 lb.-in. torque, Fuel vent hose clamps are to be tightened to 16 lb.-in. torque.

## CK LD ZW9/Box Removal non-E85 Fuel Filler/Positioning

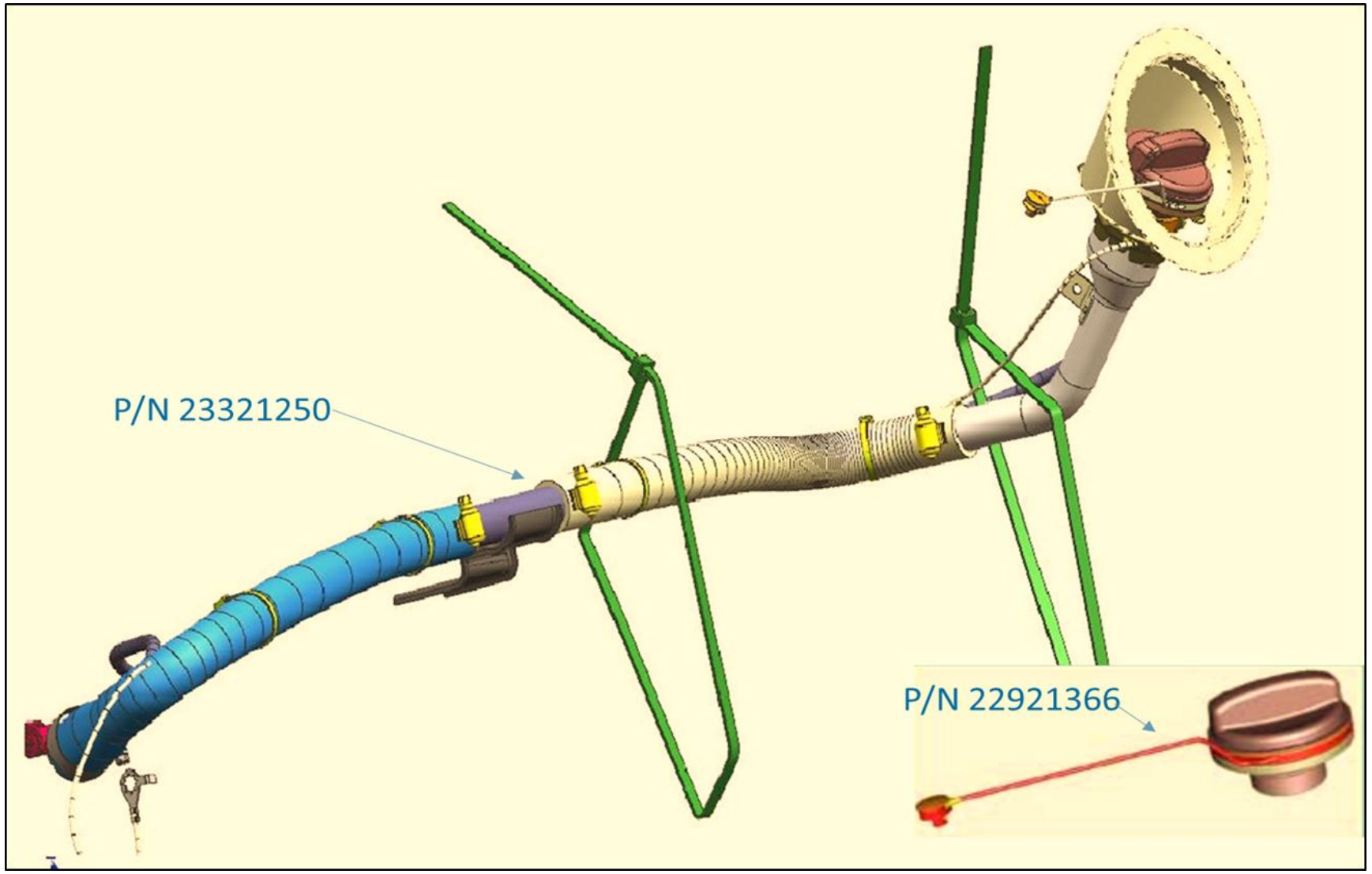



**23321250 CK LD ZW9 Fuel Filler Assembly (non-E85)**
****Scoop Location / Positioning Tolerance**

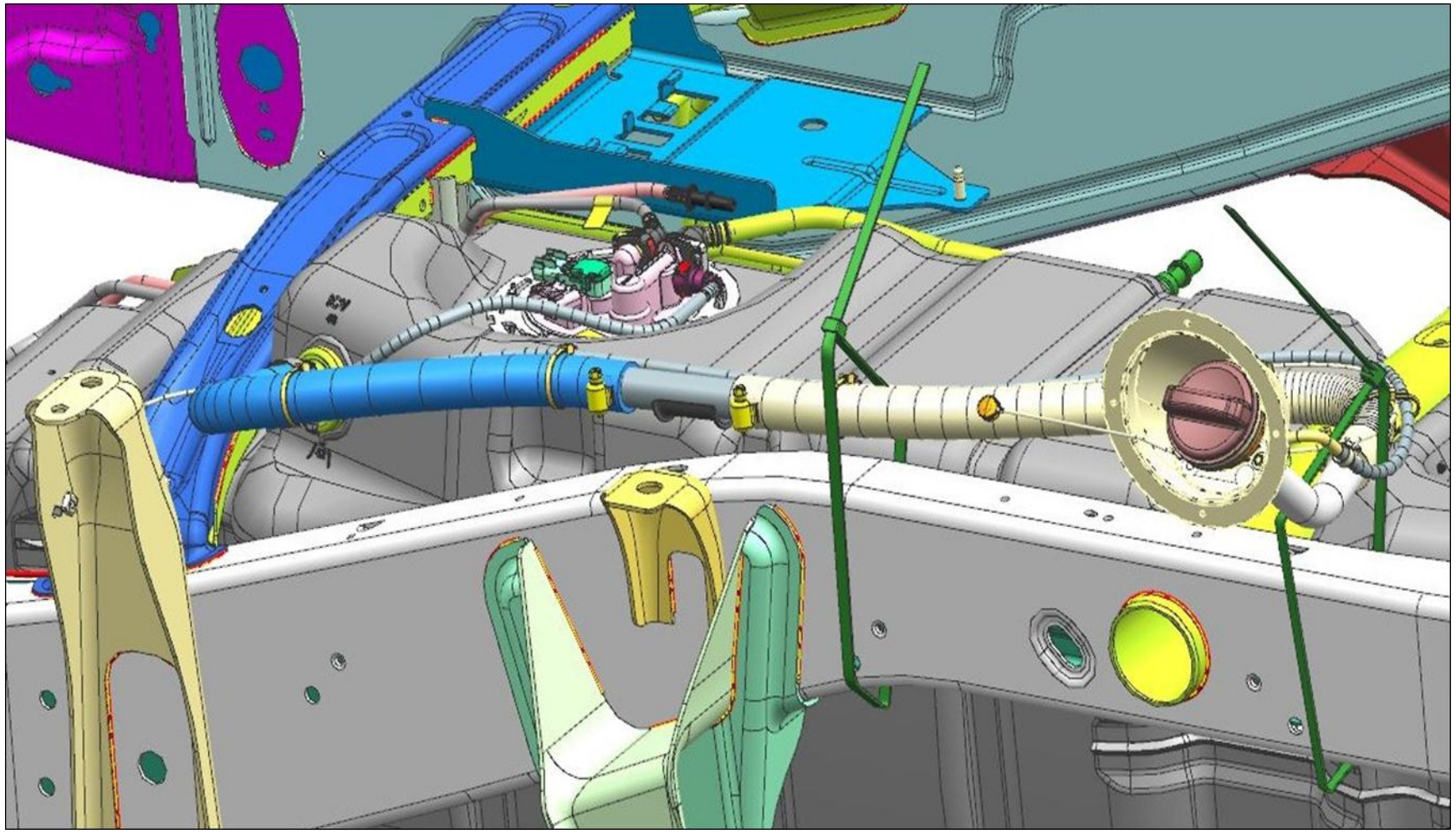
| | | |
|---|---|---|
| **A** | **990.6(39.00”)** | **+/- 25.4** |
| **C** | **457.2(18.00”)** | **+/- 13.0** |
| **D** | **181.4(7.14”)** | **+/- 13.0** |

**Fuel Filler Scoop location & routing within above tolerance zone are validated by GM to meet Federal requirements.

## CK LD ZW9/Box Removal PU Fuel Filler



## CK LD ZW9 Fuel Filler Shipping Location



# CK HD ZW9/Box Removal PU Fuel Fillers

| Part No. | Description | Series | Body Style | Options |
|---|---|---|---|---|
| 15169365 | Hose-Elbow Kit F/Fill | 100,200,300 | 03,43,53 | BJA |
| 22774522 | Pipe Asm. F/Tank Fill | 360,364 | 03,43 | &FHO&N2M/N2N |
| 23114055 | Pipe Asm. F/Tank Fill | 100,200,300 | 03,43,53 | &FHO&ZW9 |
| 22807908 | Pipe Asm. F/Tank Fill | 359 | 03,43,53 | &E65&FHS-SRW |
| 22788094 | Pipe Asm. F/Tank Fill | 200,359 | 00 | &FHX&ZW9 |
| 22786540 | Pipe Asm. F/Tank Fill | 360,364 | 03,43 | &FHX&N2M/N2N |
| 22786541 | Pipe Asm. F/Tank Fill | 360,364 | 03,43 | &FHX&N2L |
| 22774521 | Pipe Asm. F/Tank Fill | 360,364 | 03,43 | &FHO$N2L |

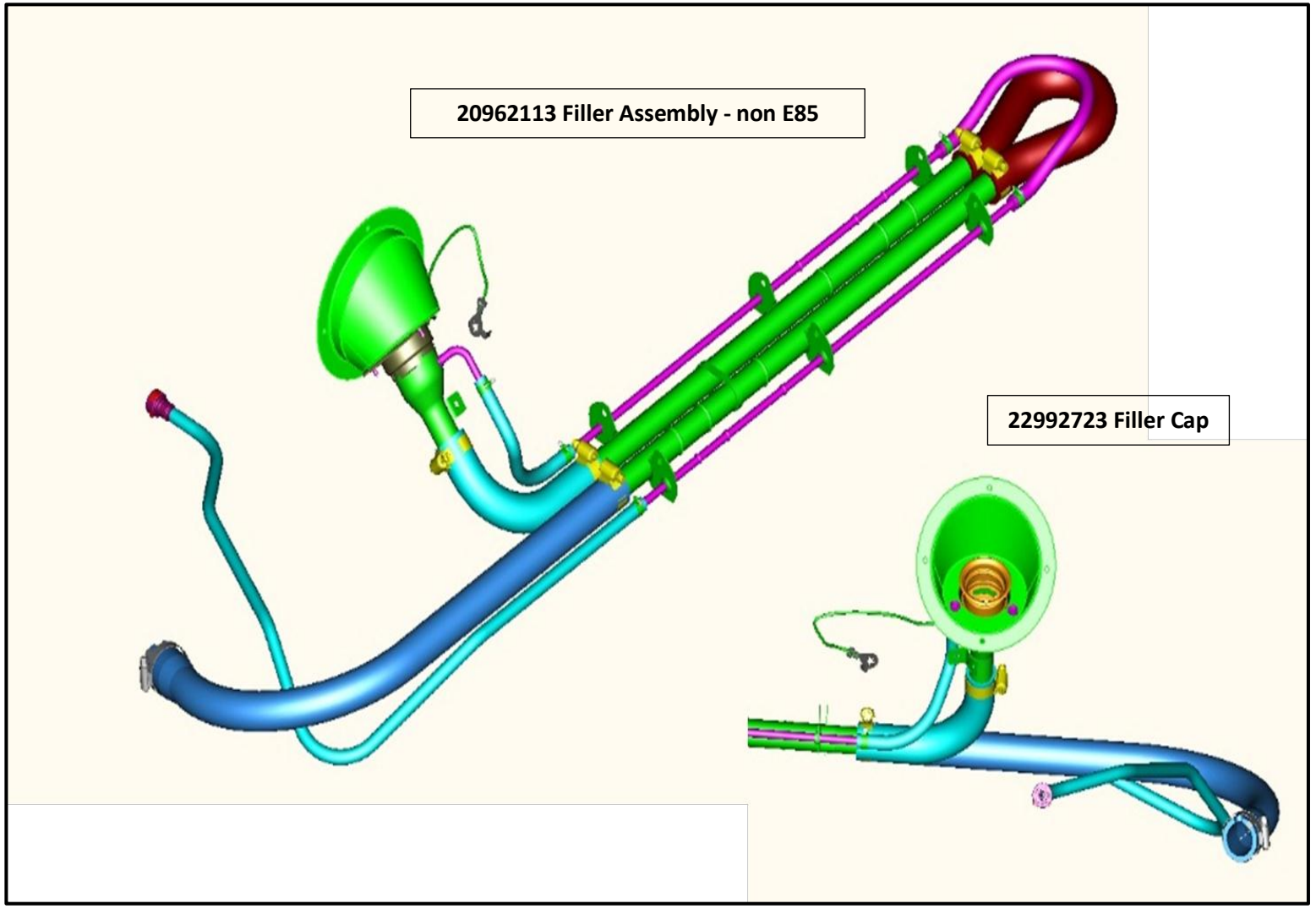
**Body Style:**

03 Regular Cab, 43 Crew Cab, 53 Extended Cab

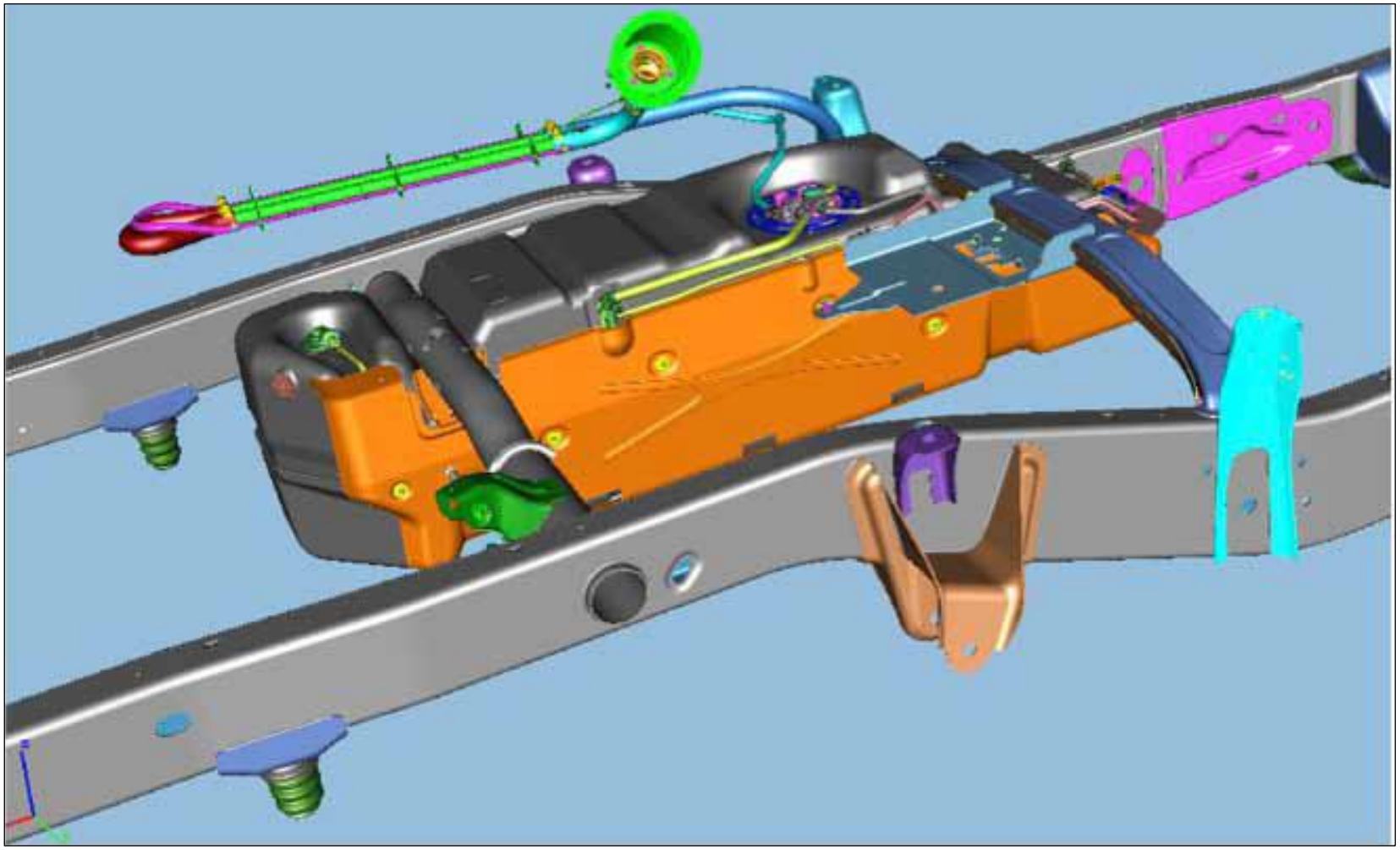
**Option Key:**

FHO-Gas, FH5-E85, FHX-Diesel, ZW9-Box Delete, N2N- Dual Tank (CC), N2L Rear Tank Only (CC), N2m Front Tank Only (CC), BJA-Includes Elbows/Service body usage.

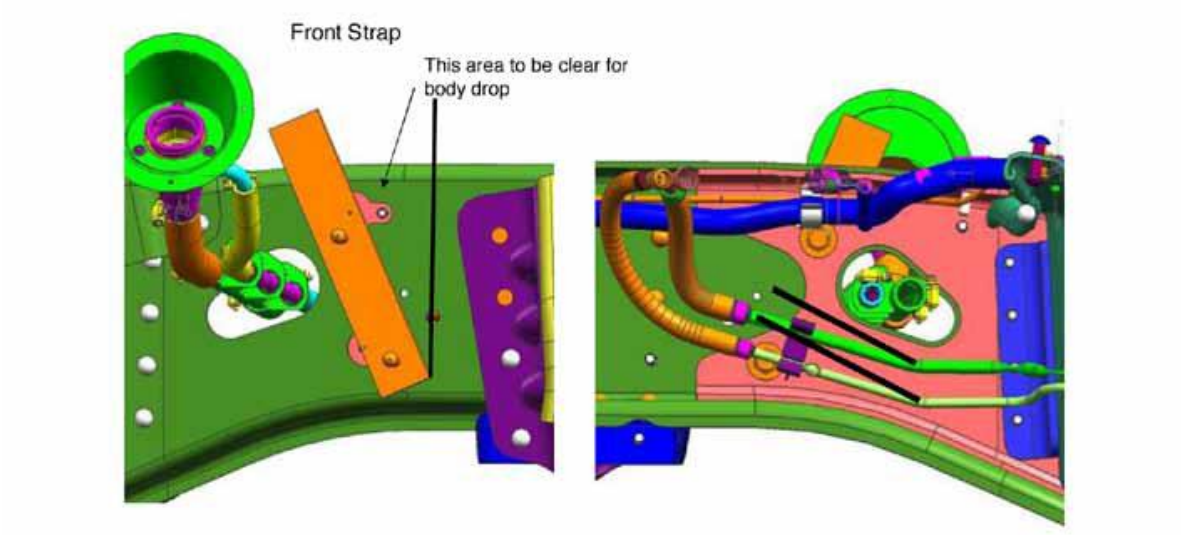
## CK HD ZW9/Box Removal PU Fuel Filler

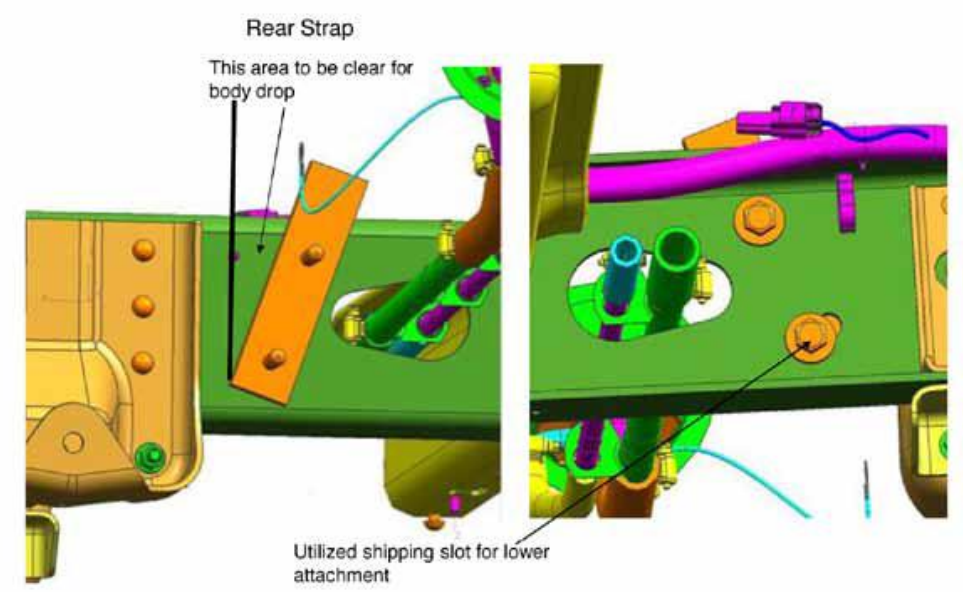


## CK HD ZW9 PU Fuel Filler Shipping Location

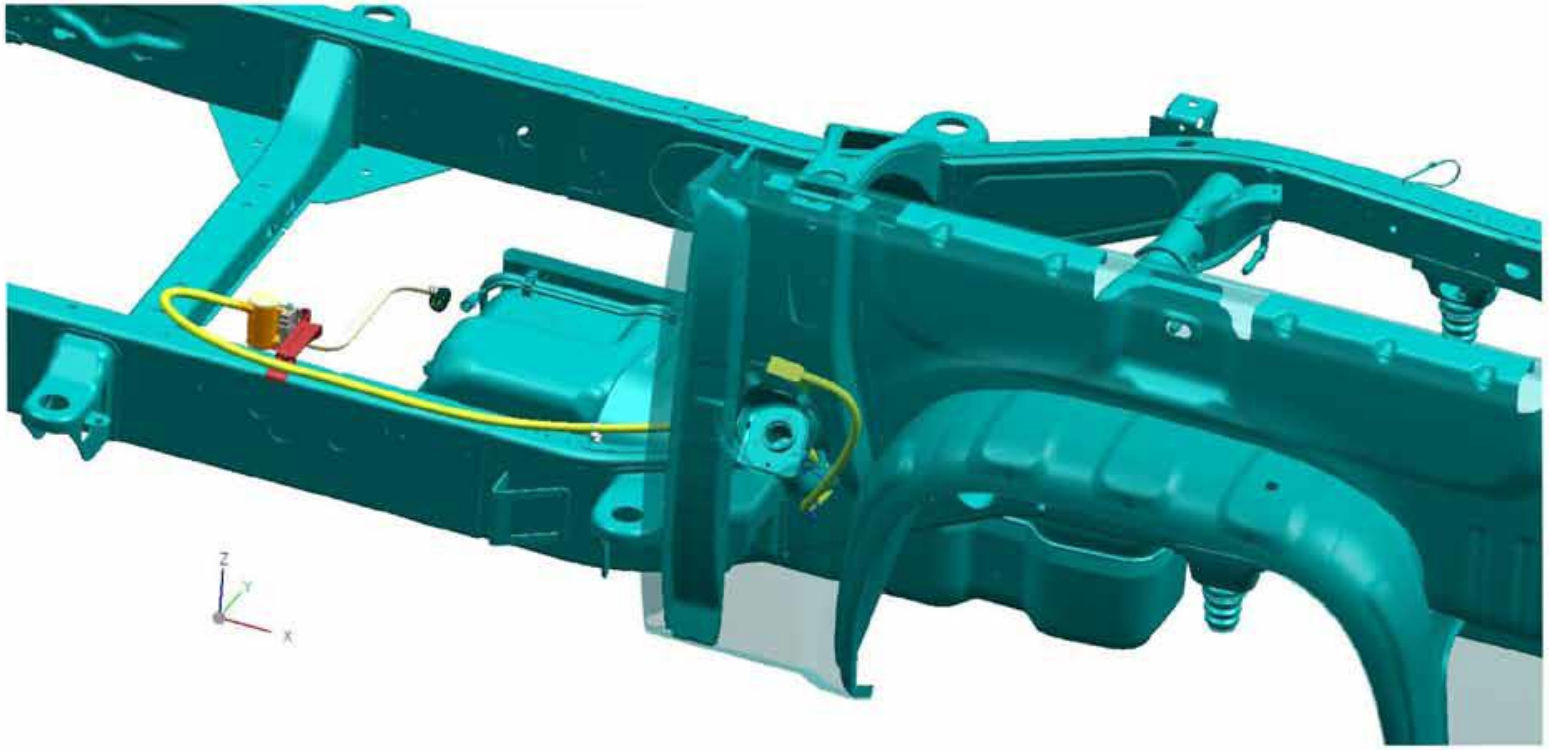


## CK HD ZW9 Cab Chassis Filler/Upfit Body Attachment



## CK LD/HD ZW9 Gas Vapor Sensor (Shipped Loose)



Note:
Gas Models require Upfitter to permanently mount Vapor Pressure Sensor Unit in a sheltered environment. Sensor wire harness should also be secured properly. Harness and Sensor should be clear of moving and or heat generating chassis components.